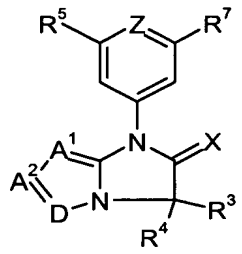
What is claimed is:

1. A compound of the formula I



(I),

wherein:

A^1 is =N- or =C(H)-;

A^2 is =N-, =C(H)-, or =C(R')- wherein R' is halogen, -CN, -Oalkyl, -CO_2alkyl or -SO_2alkyl, wherein the foregoing alkyl moieties are of 1 to 3 carbon atoms;

D is =N-, =C(R^1)-, =C(H)-, =C(SO_2R^1)-, =C(S(O)R^1)-, =C(C(O)R^1)-, =C(C(O)H)-, =C(SR^{1a})-, =C(OR^{1a})- or =C(NHR^{1a})-,

wherein R^1 is selected from the class consisting of:

(A) $-R^{100}$, which is:

branched or unbranched alkyl of 1 to 6 carbon atoms, alkenyl of 2 to 6 carbon atoms or cycloalkyl or cycloalkenyl of 3 to 6 carbon atoms, in which alkyl, alkenyl, cycloalkyl or cycloalkenyl group one or more hydrogen atoms are optionally and independently replaced with:

(i) halogen,

(ii) oxo,

(iii) aryl or heteroaryl which is selected from the class consisting of phenyl, naphthyl, indolyl, thiophenyl, pyridyl, pyrimidinyl, furyl, pyrrolyl, oxazolyl, thiazolyl, pyrazolyl, isoxazolyl, imidazolyl, isothiazolyl, oxadiazolyl, triazolyl, thiadiazolyl, pyridazinyl, pyrazinyl, triazinyl, indolyzinyl, isoindolyl, benzo[b]furanyl, benzo[b]thiophenyl, indazolyl,

benzthiazolyl, benzimidazolyl, quinolinyl, isoquinolinyl, purinyl, quinolizinyl, cinnolinyl, pthalaninyl, quinoxalinyl, napthyridinyl, pteridinyl and quinazolinyl, wherein one or more hydrogen atoms of said aryl or heteroaryl group are optionally and independently replaced with:

(a) alkyl of 1 to 3 carbon atoms,

(b) -COOH,

(c) $-SO_2OH$,

(d) $-PO(OH)_2$,

(e) a group of the formula $-COOR^8$, wherein R^8 is straight or branched alkyl of 1 to 5 carbon atoms or cycloalkyl of 3 to 5 carbon atoms,

(f) a group of the formula $-NR^9R^{10}$, wherein R^9 and R^{10} are each independently a hydrogen atom, alkyl of 1 to 6 carbon atoms, cycloalkyl of 3 to 6 carbon atoms or acyl of 1 to 7 carbon atoms, or wherein R^9 and R^{10} constitute a saturated hydrocarbon bridge of 3 to 5 carbon atoms which together with the nitrogen atom between them form a heterocyclic ring,

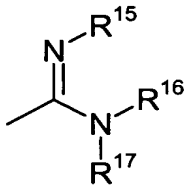
(g) a group of the formula $-CONR^{11}R^{12}$, wherein R^{11} and R^{12} are each independently a hydrogen atom, alkyl of 1 to 6 carbon atoms or cycloalkyl of 3 to 6 carbon atoms, or wherein R^{11} and R^{12} constitute a saturated hydrocarbon bridge of 3 to 5 carbon atoms which together with the nitrogen atom between them form a heterocyclic ring, and wherein one carbon atom in said hydrocarbon bridge is optionally replaced by –O-, -S-, S(O)-, SO_2-, -NH-, or –NMe-,

(h) a group of the formula $-OR^{13}$, wherein R^{13} is a hydrogen atom, or an alkyl or acyl group of 1 to 7 carbon atoms,

(i) a group of the formula $-SR^{14}$, wherein R^{14} is a hydrogen atom, or an alkyl or acyl group of 1 to 7 carbon atoms,

(j) -CN, or

(k) an amidino group of the formula



wherein R^{15}, R^{16} and R^{17} are each, independently, a hydrogen atom or alkyl of 1 to 3 carbon atoms and wherein two of R^{15}, R^{16} and R^{17} may additionally constitute a saturated hydrocarbon bridge of 3 to 5 carbon atoms which together with the nitrogen atom(s) between them form a heterocyclic ring,

(l) halogen,

(m) a group of the formula –NHCONHalkyl, wherein the alkyl moiety contains 1 to 3 carbon atoms,

(n) a group of the formula –NHCOOalkyl, wherein the alkyl moiety contains 1 to 3 carbon atoms,

(iv) a group of the formula $-COOR^{18}$, wherein R^{18} is straight or branched alkyl of 1 to 7 carbon atoms or cycloalkyl of 3 to 6 carbon atoms,

(v) -CN,

(vi) a group of the formula $-CONR^{19}R^{20}$, wherein R^{19} and R^{20} are each, independently, a hydrogen atom, alkyl of 1 to 6 carbon atoms or cycloalkyl of 3 to 6 carbon atoms, or wherein R^{19} and R^{20} constitute a saturated hydrocarbon bridge of 3 to 5 carbon atoms which together with the nitrogen atom between them form a heterocyclic ring, and wherein one carbon atom in said hydrocarbon bridge is optionally replaced by -O-, -S-, S(O)-, SO_2-, -NH-, or –NMe-,

(vii) a group of the formula $-OR^{21}$, wherein R^{21} is a hydrogen atom, or a straight or branched alkyl or acyl group of 1 to 7 carbon atoms, wherein one or more hydrogen atoms of said alkyl or acyl group are optionally replaced with a group independently selected from the class consisting of

-OH, -Oalkyl (wherein the alkyl moiety contains 1 to 6 carbon atoms), $-NH_2$, -NHMe and $-NMe_2$,

(viii) a group of the formula $-SR^{22}$, wherein R^{22} is a hydrogen atom, or an alkyl or acyl group of 1 to 7 carbon atoms, wherein one or more hydrogen atoms of said alkyl or acyl group are optionally replaced with a group independently selected from the class consisting of -OH, -Oalkyl (wherein the alkyl moiety is 1 to 6 carbon atoms), $-NH_2$, -NHMe and $-NMe_2$,

(ix) a group of the formula $-NR^{23}R^{24}$, wherein R^{23} and R^{24} are each, independently,

(a) a hydrogen atom,

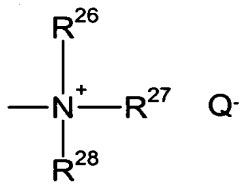
(b) straight or branched alkyl or acyl of 1 to 7 carbon atoms or cycloalkyl of 3 to 7 carbon atoms, wherein said one or more hydrogen atoms of said alkyl or acyl group are optionally replaced with a group independently selected from the class consisting of -OH, -Oalkyl (wherein the alkyl moiety is 1 to 6 carbon atoms), $-NH_2$, -NHMe and $-NMe_2$,

(c) a group of the formula $-(CH_2)_mCOOH$, wherein m is 0, 1 or 2,

(d) a group of the formula $-(CH_2)_nCOOR^{25}$, wherein n is 0, 1 or 2, and wherein R^{25} is straight or branched alkyl of 1 to 6 carbon atoms, or

(e) a group of the formula $-(CH_2)_nCONHR^{25}$, wherein n is 0, 1 or 2, and wherein R^{25} is straight or branched alkyl of 1 to 6 carbon atoms,

(x) a quaternary group of the formula



wherein R^{26}, R^{27} and R^{28} are each, independently, a branched or

unbranched alkyl group of 1 to 7 carbon atoms and Q^- is a pharmaceutically acceptable counter ion,

(xi) a saturated, or partially unsaturated heterocyclic group consisting of 3 to 7 ring atoms selected from N, O, C and S, including but not limited to imidazolinyl, imidazolidinyl, pyrrolinyl, pyrrolidinyl, piperidinyl, piperazinyl, morpholinyl, thiomorpholinyl, thiazolidinyl, azepinyl, tetrahydropyranyl, tetrahydrofuranyl, benzodioxolyl, tetrahydrothiophenyl and sulfolanyl, wherein said heterocyclic group is optionally mono- or polysubstituted with oxo, and

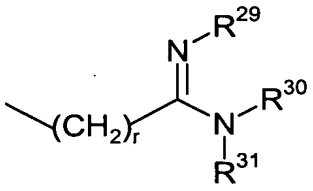
(xii) a cycloalkyl group of 3 to 7 carbon atoms,

(B) branched or unbranched carboxylic acid groups of 3 to 6 carbon atoms,

(C) branched or unbranched phosphonic acid groups of 2 to 6 carbon atoms,

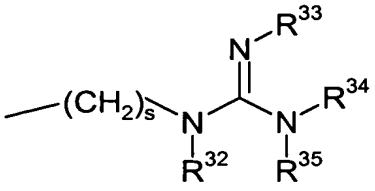
(D) branched or unbranched sulfonic acid groups of 2 to 6 carbon atoms,

(E) amidino groups of the formula



wherein r is 2, 3, 4, 5 or 6, and R^{29}, R^{30} and R^{31} are each, independently, a hydrogen atom or alkyl of 1 to 3 carbon atoms, and wherein two of R^{29}, R^{30} and R^{31} may additionally constitute a saturated hydrocarbon bridge of 3 to 5 carbon atoms which together with the nitrogen atom(s) between them form a heterocyclic ring,

(F) guanidino groups of the formula



wherein s is 2, 3, 4, 5 or 6, and R^{32}, R^{33}, R^{34} and R^{35} are each, independently, a hydrogen atom or alkyl of 1 to 3 carbon atoms, and wherein

two of R^{32}, R^{33}, R^{34} and R^{35} may additionally constitute a saturated hydrocarbon bridge of 3 to 5 carbon atoms which together with the nitrogen atom(s) between them form a heterocyclic ring,

(G) aryl or heteroaryl which is selected from the class consisting of phenyl, naphthyl, indolyl, thiophenyl, pyridyl, pyrimidinyl, furyl, pyrrolyl, oxazolyl, thiazolyl, pyrazolyl, isoxazolyl, imidazolyl, isothiazolyl, oxadiazolyl, triazolyl, thiadiazolyl, pyridazinyl, pyrazinyl, triazinyl, indolyzinyl, isoindolyl, benzo[b]furanyl, benzo[b]thiophenyl, indazolyl, benzthiazolyl, benzimidazolyl, quinolinyl, isoquinolinyl, purinyl, quinolizinyl, cinnolinyl, pthalaninyl, quinoxalinyl, napthyridinyl, pteridinyl and quinazolinyl, wherein one or more hydrogen atoms of said aryl or heteroaryl group are optionally and independently replaced with:

(i) alkyl of 1 to 3 carbon atoms,

(ii) -COOH,

(iii) $-SO_2OH$,

(iv) $-PO(OH)_2$,

(v) a group of the formula $-COOR^{36}$, wherein R^{36} is straight or branched alkyl of 1 to 5 carbon atoms or cycloalkyl of 3 to 5 carbon atoms,

(vi) a group of the formula $-NR^{37}R^{38}$, wherein R^{37} and R^{38} are each, independently, a hydrogen atom, alkyl of 1 to 6 carbon atoms, cycloalkyl of 3 to 6 carbon atoms or acyl of 1 to 7 carbon atoms, or wherein R^{37} and R^{38} constitute a saturated hydrocarbon bridge of 3 to 5 carbon atoms which together with the nitrogen atom between them form a heterocyclic ring,

(vii) a group of the formula $-CONR^{39}R^{40}$, wherein R^{39} and R^{40} are each, independently, a hydrogen atom, alkyl of 1 to 6 carbon atoms or cycloalkyl of 3 to 6 carbon atoms, or wherein R^{39} and R^{40} constitute a saturated hydrocarbon bridge of 3 to 5 carbon atoms which together with the nitrogen atom between them form a heterocyclic ring, and wherein

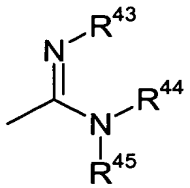
one carbon atom in said hydrocarbon bridge is optionally replaced by -O-, -S-, S(O)-, SO_2-, -NH-, or –NMe-,

(viii) a group of the formula $-OR^{41}$, wherein R^{41} is a hydrogen atom, or an alkyl or acyl group of 1 to 7 carbon atoms,

(ix) a group of the formula $-SR^{42}$, wherein R^{42} is a hydrogen atom, or an alkyl or acyl group of 1 to 7 carbon atoms,

(x) -CN, or

(xi) an amidino group of the formula



wherein R^{43}, R^{44} and R^{45} are each, independently, a hydrogen atom or alkyl of 1 to 3 carbon atoms, and wherein two of R^{43}, R^{44} and R^{45} may additionally constitute a saturated hydrocarbon bridge of 3 to 5 carbon atoms which together with the nitrogen atom(s) between them form a heterocyclic ring,

(H) groups of the formula $-NR^{46}R^{47}$, wherein R^{46} and R^{47} are each independently a hydrogen atom, phenyl which is optionally mono-or polysubstituted with halogen, or R^{100}, wherein R^{100} is as hereinbefore defined,

(I) saturated or unsaturated heterocyclic groups consisting of 3 to 7 ring atoms selected from N, O, C and S, or bicyclic heterocyclic groups consisting of 8 to 11 atoms selected from N, O, C and S, including but not limited to imidazolinyl, imidazolidinyl, pyrrolinyl, pyrrolidinyl, piperidinyl, piperazinyl, morpholinyl, thiomorpholinyl, thiazolidinyl, azepinyl, tetrahydropyranyl, tetrahydrofuranyl, benzodioxolyl, tetrahydrothiophenyl and sulfolanyl, wherein said heterocyclic group is optionally mono- or poly-substituted with moieties selected from the class consisting of:

(i) oxo,

(ii) $-OR^{101}$, wherein R^{101} is:

(a) a hydrogen atom,

(b) alkyl of 1 to 7 carbons, wherein any hydrogen atom of said alkyl group is optionally replaced with –OH, $-OR^{110}$ (wherein R^{110} is an alkyl moiety of 1 to 6 carbon atoms), $-NH_2$, -NHMe or $-NMe_2$,

(c) acyl of 1 to 7 carbons, wherein any hydrogen atom of said acyl group is optionally replaced with -OH, $-OR^{111}$ (wherein R^{111} is an alkyl moiety of 1 to 6 carbon atoms), $-NH_2$, -NHMe or $-NMe_2$,

(d) $-CONR^{102}R^{103}$, wherein R^{102} and R^{103} are each independently a hydrogen atom or alkyl of 1 to 7 atoms, or wherein R^{102} and R^{103} constitute a saturated hydrocarbon bridge of 3 to 5 carbon atoms which together with the nitrogen atom between them form a heterocyclic ring, and wherein one carbon atom in said hydrocarbon bridge is optionally replaced by –O-, -S-, S(O)-, SO_2-, -NH-, or -NMe-, or

(e) $-COOR^{104}$, wherein R^{104} is alkyl of 1 to 7 atoms,

(iii) $-CONR^{105}R^{106}$, wherein R^{105} and R^{106} are each independently:

(a) a hydrogen atom,

(b) straight or branched alkyl of 1 to 7 atoms or cycloalkyl of 3 to 7 atoms,

(c) benzoyl,

(d) benzyl or

(e) phenyl, wherein said phenyl ring is optionally mono- or polysubstituted with $-OR^{112}$,wherein R^{112} is alkyl of 1 to 6 carbon atoms,

or, wherein R^{105} and R^{106} constitute a saturated hydrocarbon bridge of 3 to 5 carbon atoms which together with the nitrogen atom between them form a heterocyclic ring, and wherein one carbon atom in said

hydrocarbon bridge is optionally replaced by –O-, -S-, S(O)-, SO_2-, -NH-, or –NMe-,

(iv) -$COOR^{107}$, wherein R^{107} is a hydrogen atom, or straight or branched alkyl of 1 to 7 carbon atoms ,

(v) straight or branched alkyl of 1 to 7 carbon atoms, alkenyl or alkynyl of 2 to 7 carbon atoms, or cycloalkyl of 3 to 7 carbons, wherein one or more hydrogen atoms of said alkyl, alkenyl, alkynyl or cycloalkyl group is optionally replaced with a moiety independently selected from the class consisting of:

(a) oxo,

(b) -OH,

(c) -OR^{113}, wherein R^{113} is alkyl of 1 to 6 carbon atoms,

(d) -$OCOCH_3$,

(e) -NH_2,

(f) -NHMe,

(g) -NMe_2,

(h) -CO_2H, and

(i) -CO_2 R^{114} wherein R^{114} is alkyl of 1 to 3 carbon atoms, or cycloalkyl of 3 to 7 carbons,

(vi) acyl of 1 to 7 carbon atoms, which may be straight, branched or cyclic, and wherein one or more hydrogen atoms of said acyl group is optionally replaced with a moiety independently selected from the class consisting of:

(a) -OH,

(b) -OR^{115},wherein R^{115} is alkyl of 1 to 6 carbon atoms,

(c) -NH_2,

(d) -NHMe,

(e) -NMe_2,

(f) -NHCOMe,

(g) oxo,

(h) $-CO_2 R^{116}$, wherein R^{116} is alkyl of 1 to 3 carbon atoms,

(i) -CN,

(j) the halogen atoms,

(k) heterocycles selected from the class consisting of imidazolinyl, imidazolidinyl, pyrrolinyl, pyrrolidinyl, piperidinyl, piperazinyl, morpholinyl, thiomorpholinyl, thiazolidinyl, azepinyl, tetrahydropyranyl, tetrahydrofuranyl, benzodioxolyl, tetrahydrothiophenyl and sulfolanyl, and

(l) aryl or heteroaryl selected from the class consisting of phenyl, naphthyl, indolyl, thiophenyl, pyridyl, pyrimidinyl, furyl, pyrrolyl, oxazolyl, thiazolyl, pyrazolyl, isoxazolyl, imidazolyl, isothiazolyl, oxadiazolyl, triazolyl, thiadiazolyl, pyridazinyl, pyrazinyl, triazinyl, indolyzinyl, isoindolyl, benzo[b]furanyl, benzo[b]thiophenyl, indazolyl, benzthiazolyl, benzimidazolyl, quinolinyl, isoquinolinyl, purinyl, quinolizinyl, cinnolinyl, pthalaninyl, quinoxalinyl, napthyridinyl, pteridinyl and quinazolinyl,

(vii) $-SO_2R^{108}$, wherein R^{108} is:

(a) aryl or heteroaryl which is selected from the group consisting of phenyl, naphthyl, indolyl, thiophenyl, pyridyl, pyrimidinyl, furyl, pyrrolyl, oxazolyl, thiazolyl, pyrazolyl, isoxazolyl, imidazolyl, isothiazolyl, oxadiazolyl, triazolyl, thiadiazolyl, pyridazinyl, pyrazinyl, triazinyl, indolyzinyl, isoindolyl, benzo[b]furanyl, benzo[b]thiophenyl, indazolyl, benzthiazolyl, benzimidazolyl, quinolinyl, isoquinolinyl, purinyl, quinolizinyl, cinnolinyl, pthalaninyl, quinoxalinyl, napthyridinyl, pteridinyl and quinazolinyl, wherein said aryl or heteroaryl moiety is optionally substituted with one or more moieties selected from the class consisting of the halogen atoms, straight or branched alkyl of 1 to 6 carbons, and $-OR^{117}$ (wherein R^{117} is hydrogen or alkyl of 1 to 6 carbon atoms),

(b) a heterocyclic group selected from the class consisting of imidazolinyl, imidazolidinyl, pyrrolinyl, pyrrolidinyl, piperidinyl, piperazinyl, morpholinyl, thiomorpholinyl, thiazolidinyl, azepinyl, tetrahydropyranyl, tetrahydrofuranyl, benzodioxolyl, tetrahydrothiophenyl and sulfolanyl, wherein said heterocyclic group is optionally substituted with one or more moieties selected from the class consisting of the halogen atoms, straight or branched alkyl of 1 to 6 carbons, and -OR^{118} (wherein R^{118} is hydrogen or alkyl of 1 to 6 carbon atoms), or

(c) straight or branched alkyl of 1 to 7 atoms, wherein said alkyl moiety is optionally substituted with one or more moieties selected from the class consisting of the halogen atoms, straight or branched alkyl of 1 to 6 carbons, and –OR^{119} (wherein R^{119} is hydrogen or alkyl of 1 to 6 carbon atoms),

(viii) -COR^{109}, wherein R^{109} is:

(a) aryl or heteroaryl which is selected from the class consisting of phenyl, naphthyl, indolyl, thiophenyl, pyridyl, pyrimidinyl, furyl, pyrrolyl, oxazolyl, thiazolyl, pyrazolyl, isoxazolyl, imidazolyl, isothiazolyl, oxadiazolyl, triazolyl, thiadiazolyl, pyridazinyl, pyrazinyl, triazinyl, indolyzinyl, isoindolyl, benzo[b]furanyl, benzo[b]thiophenyl, indazolyl, benzthiazolyl, benzimidazolyl, quinolinyl, isoquinolinyl, purinyl, quinolizinyl, cinnolinyl, pthalaninyl, quinoxalinyl, napthyridinyl, pteridinyl and quinazolinyl, wherein said aryl or heteroaryl moiety is optionally substituted with one or more moieties selected from the class consisting of the halogen atoms, straight or branched alkyl of 1 to 6 carbons, and -OR^{120} (wherein R^{120} is hydrogen or alkyl of 1 to 6 carbon atoms),

(b) a heterocyclic group selected from the class consisting of imidazolinyl, imidazolidinyl, pyrrolinyl, pyrrolidinyl, piperidinyl,

piperazinyl, morpholinyl, thiomorpholinyl, thiazolidinyl, azepinyl, tetrahydropyranyl, tetrahydrofuranyl, benzodioxolyl, tetrahydrothiophenyl and sulfolanyl, wherein said heterocyclyl is optionally substituted with one or more halogen, straight or branched alkyl of 1 to 6 carbons, or -OR^{121} (wherein R^{121} is hydrogen or alkyl of 1 to 6 carbon atoms), or

(c) straight or branched alkyl of 1 to 7 atoms, wherein said alkyl moiety is optionally substituted with one or more moieties selected from the class consisting of the halogen atoms, straight or branched alkyl of 1 to 6 carbons, and -OR^{122} (wherein R^{122} is hydrogen or alkyl of 1 to 6 carbon atoms),

(ix) -CHO,

(x) the halogen atoms, and

(xi) aryl or heteroaryl which is selected from the class consisting of phenyl, naphthyl, indolyl, thiophenyl, pyridyl, pyrimidinyl, furyl, pyrrolyl, oxazolyl, thiazolyl, pyrazolyl, isoxazolyl, imidazolyl, isothiazolyl, oxadiazolyl, triazolyl, thiadiazolyl, pyridazinyl, pyrazinyl, triazinyl, indolyzinyl, isoindolyl, benzo[b]furanyl, benzo[b]thiophenyl, indazolyl, benzthiazolyl, benzimidazolyl, quinolinyl, isoquinolinyl, purinyl, quinolizinyl, cinnolinyl, pthalaninyl, quinoxalinyl, napthyridinyl, pteridinyl and quinazolinyl,

(J) the halogen atoms, and

(K) -CN and,

wherein R^{1a} is R^{100};

X is an oxygen or sulfur atom;

R^3 is:

(A) a hydrogen atom, or

(B) branched or unbranched alkyl of 1 to 3 carbon atoms or cycloalkyl of 3 to 5 carbon atoms wherein said alkyl or cycloalkyl group is optionally substituted with:

(i) a group of the formula $-OR^{48}$, wherein R^{48} is a hydrogen atom, or an alkyl or acyl group of 1 to 7 carbon atoms, or

(ii) a group of the formula $-NR^{49}R^{50}$, wherein R^{49} and R^{50} are each, independently, a hydrogen atom, alkyl of 1 to 2 carbon atoms, or acyl of 1 to 2 carbon atoms;

R^4 is a group of the formula $-(CR^{51}R^{52})_x(CR^{53}R^{54})_yR^{55}$, wherein,

x is 0 or 1,

y is 0 or 1,

R^{51}, R^{52} and R^{53} are each, independently:

(A) a hydrogen atom,

(B) a group of the formula $-OR^{56}$, wherein R^{56} is a hydrogen atom, or an alkyl or acyl group of 1 to 7 carbon atoms, or

(C) branched or unbranched alkyl of 1 to 3 carbon atoms or cycloalkyl of 3 to 5 carbon atoms,

R^{54} is:

(A) a group of the formula R^{57}, wherein R^{57} is independently selected from the same class as is R^1, or

(B) a group of the formula $-OR^{58}$, wherein R^{58} is independently selected from the same class as is R^1;

R^{55} is:

aryl or heteroaryl which is selected from the class consisting of phenyl, naphthyl, indolyl, thiophenyl, pyridyl, pyrimidinyl, furyl, pyrrolyl, oxazolyl, thiazolyl, pyrazolyl, isoxazolyl, imidazolyl, isothiazolyl, oxadiazolyl, triazolyl, thiadiazolyl, pyridazinyl, pyrazinyl, triazinyl, indolyzinyl, isoindolyl, benzo[b]furanyl, benzo[b]thiophenyl, indazolyl, benzthiazolyl, benzimidazolyl, quinolinyl, isoquinolinyl, purinyl, quinolizinyl, cinnolinyl, pthalaninyl, quinoxalinyl, napthyridinyl, pteridinyl and quinazolinyl, wherein one or more of the hydrogen atoms of said aryl or heteroaryl group is optionally and independently replaced with:

(A) R^{59}, which is aryl or heteroaryl selected from the class consisting of phenyl, naphthyl, indolyl, thiophenyl, pyridyl, pyrimidinyl, furyl, pyrrolyl, oxazolyl, thiazolyl, pyrazolyl, isoxazolyl, imidazolyl, isothiazolyl, oxadiazolyl, triazolyl, thiadiazolyl, pyridazinyl, pyrazinyl, triazinyl, indolyzinyl, isoindolyl, benzo[b]furanyl, benzo[b]thiophenyl, indazolyl, benzthiazolyl, benzimidazolyl, quinolinyl, isoquinolinyl, purinyl, quinolizinyl, cinnolinyl, pthalaninyl, quinoxalinyl, napthyridinyl, pteridinyl and quinazolinyl, wherein one or more of the hydrogen atoms of said aryl or heteroaryl group is optionally and independently replaced with:

(i) branched or unbranched alkyl of 1 to 6 carbon atoms or cycloalkyl of 3 to 6 carbon atoms, which alkyl or cycloakyl group is optionally mono- or polysubstituted with halogen or oxo,

(ii) a group of the formula $-COOR^{60}$, wherein R^{60} is straight or branched alkyl of 1 to 5 carbon atoms or cycloalkyl of 3 to 5 carbon atoms,

(iii) a group of the formula $-NR^{61}R^{62}$, wherein R^{61} and R^{62} are each, independently, a hydrogen atom, alkyl or fluoroalkyl of 1 to 6 carbon atoms, cycloalkyl of 3 to 6 carbon atoms or acyl of 1 to 7 carbon atoms, or wherein R^{61} and R^{62} constitute a saturated hydrocarbon bridge of 3 to 5 carbon atoms which together with the nitrogen atom between them form a heterocyclic ring,

(iv) a group of the formula $-CONR^{63}R^{64}$, wherein R^{63} and R^{64} are each, independently, a hydrogen atom, alkyl or fluoroalkyl of 1 to 6 carbon atoms or cycloalkyl of 3 to 6 carbon atoms, or wherein R^{63} and R^{64} constitute a saturated hydrocarbon bridge of 3 to 5 carbon atoms which together with the nitrogen atom between them form a heterocyclic ring,

(v) a group of the formula $-OR^{65}$, wherein R^{65} is a hydrogen atom, or an alkyl, fluoroalkyl or acyl group of 1 to 7 carbon atoms,

(vi) a group of the formula $-SR^{66}$, wherein R^{66} is a hydrogen atom, or an alkyl , fluoroalkyl or acyl group of 1 to 7 carbon atoms,

(vii) -CN,

(viii) nitro, or

(ix) halogen,

(B) methyl, which is optionally mono- or polysubstituted with fluorine atoms and additionally is optionally monosubstituted with R^{59},

(C) branched or unbranched alkyl of 2 to 6 carbon atoms or cycloalkyl of 3 to 6 carbon atoms, which alkyl or cycloakyl group is optionally mono- or polysubstituted with halogen or oxo,

(D) a group of the formula $-COOR^{67}$, wherein R^{67} is straight or branched alkyl of 1 to 5 carbon atoms or cycloalkyl of 3 to 5 carbon atoms,

(E) a group of the formula $-NR^{68}R^{69}$, wherein R^{68} and R^{69} are each, independently, a hydrogen atom, alkyl or fluoroalkyl of 1 to 6 carbon atoms, cycloalkyl of 3 to 6 carbon atoms or acyl of 1 to 7 carbon atoms, or wherein R^{68} and R^{69} constitute a saturated hydrocarbon bridge of 3 to 5 carbon atoms which together with the nitrogen atom between them form a heterocyclic ring, and wherein one of R^{68} and R^{69} may additionally be the group R^{59},

(F) a group of the formula $-CONR^{70}R^{71}$, wherein R^{70} and R^{71} are each, independently, a hydrogen atom, alkyl or fluoroalkyl of 1 to 6 carbon atoms or cycloalkyl of 3 to 6 carbon atoms, or wherein R^{70} and R^{71} constitute a saturated hydrocarbon bridge of 3 to 5 carbon atoms which together with the nitrogen atom between them form a heterocyclic ring, and wherein one of R^{70} and R^{71} may additionally be the group R^{59},

(G) a group of the formula $-COR^{72}$, wherein R^{72} is a hydrogen atom, straight or branched alkyl of 1 to 5 carbon atoms, cycloalkyl of 3 to 5 carbon atoms or R^{59},

(H) a group of the formula $-OR^{73}$, wherein R^{73} is a hydrogen atom, an alkyl , fluoroalkyl or acyl group of 1 to 7 carbon atoms, or R^{59},

(I) a group of the formula $-SR^{74}$, wherein R^{74} is a hydrogen atom, an alkyl , fluoroalkyl or acyl group of 1 to 7 carbon atoms, or R^{59},

(J) -CN,

(K) nitro, or

(L) halogen;

R^5 is Cl or trifluoromethyl;

Z is =N- or $=C(R^6)$- wherein R^6 is a hydrogen, fluorine, chlorine, bromine or iodine atom, methyl or trifluoromethyl; and,

R^7 is a hydrogen, fluorine, chlorine, bromine or iodine atom, methyl, -CN, nitro or trifluoromethyl, with the condition that when Z is =N- or =C(H)-, R^7 is chlorine, trifluoromethyl, -CN or nitro;

or a pharmaceutically acceptable salt thereof.

2. A compound of the formula I, as set forth in claim 1, wherein:

A^1 is =N- or =C(H)-;

A^2 is =N-, =C(H)-, or =C(R')- wherein R' is halogen, -CN, -Oalkyl, $-CO_2$alkyl or $-SO_2$alkyl, wherein the foregoing alkyl moieties are of 1 to 3 carbon atoms;

D is =N-, $=C(R^1)$-, =C(H)-, $=C(SO_2R^1)$-, $=C(S(O)R^1)$-, $=C(C(O)R^1)$-, =C(C(O)H)-, $=C(SR^{1a})$-, $=C(OR^{1a})$- or $=C(NHR^{1a})$-,

wherein R^1 is selected from the class consisting of:

(A) $-R^{100a}$, which is:

branched or unbranched alkyl of 1 to 6 carbon atoms, alkenyl of 2 to 6 carbon atoms or cycloalkyl or cycloalkenyl of 3 to 6 carbon atoms, in which alkyl, alkenyl, cycloalkyl or cycloalkenyl group one or more hydrogen atoms are optionally and independently replaced with:

(i) halogen,

(ii) oxo,

(iii) aryl or heteroaryl which is selected from the class consisting of phenyl, naphthyl, indolyl, thiophenyl, pyridyl, pyrimidinyl, furyl, pyrrolyl, oxazolyl, thiazolyl, pyrazolyl, isoxazolyl, imidazolyl, isothiazolyl, oxadiazolyl, triazolyl, thiadiazolyl, pyridazinyl, pyrazinyl, triazinyl, indolyzinyl, isoindolyl, benzo[b]furanyl, benzo[b]thiophenyl, indazolyl, benzthiazolyl, benzimidazolyl, quinolinyl, isoquinolinyl, purinyl, quinolizinyl, cinnolinyl, pthalaninyl, quinoxalinyl, napthyridinyl, pteridinyl and quinazolinyl, wherein one or more hydrogen atoms of said aryl or heteroaryl group are optionally and independently replaced with:

(a) alkyl of 1 to 3 carbon atoms,

(b) -COOH,

(c) $-SO_2OH$,

(d) $-PO(OH)_2$,

(e) a group of the formula $-COOR^8$, wherein R^8 is straight or branched alkyl of 1 to 5 carbon atoms or cycloalkyl of 3 to 5 carbon atoms,

(f) a group of the formula $-NR^9R^{10}$, wherein R^9 and R^{10} are each independently a hydrogen atom, alkyl of 1 to 6 carbon atoms, cycloalkyl of 3 to 6 carbon atoms or acyl of 1 to 7 carbon atoms, or wherein R^9 and R^{10} constitute a saturated hydrocarbon bridge of 3 to 5 carbon atoms which together with the nitrogen atom between them form a heterocyclic ring,

(g) a group of the formula $-CONR^{11}R^{12}$, wherein R^{11} and R^{12} are each independently a hydrogen atom, alkyl of 1 to 6 carbon atoms or cycloalkyl of 3 to 6 carbon atoms, or wherein R^{11} and R^{12} constitute a saturated hydrocarbon bridge of 3 to 5 carbon atoms which together with the nitrogen atom between them form a heterocyclic ring, and wherein one carbon atom in said

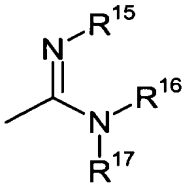
hydrocarbon bridge is optionally replaced by -O-, -S-, S(O)-, SO_2-, -NH-, or -NMe-,

(h) a group of the formula –OR^{13}, wherein R^{13} is a hydrogen atom, or an alkyl or acyl group of 1 to 7 carbon atoms,

(i) a group of the formula –SR^{14}, wherein R^{14} is a hydrogen atom, or an alkyl or acyl group of 1 to 7 carbon atoms,

(j) -CN, or

(k) an amidino group of the formula



wherein R^{15}, R^{16} and R^{17} are each, independently, a hydrogen atom or alkyl of 1 to 3 carbon atoms and wherein two of R^{15}, R^{16} and R^{17} may additionally constitute a saturated hydrocarbon bridge of 3 to 5 carbon atoms which together with the nitrogen atom(s) between them form a heterocyclic ring,

(l) halogen,

(m) a group of the formula –NHCONHalkyl, wherein the alkyl moiety contains 1 to 3 carbon atoms,

(n) a group of the formula –NHCOOalkyl, wherein the alkyl moiety contains 1 to 3 carbon atoms,

(iv) a group of the formula –$COOR^{18}$, wherein R^{18} is straight or branched alkyl of 1 to 7 carbon atoms or cycloalkyl of 3 to 6 carbon atoms,

(v) -CN,

(vi) a group of the formula –$CONR^{19}R^{20}$, wherein R^{19} and R^{20} are each, independently, a hydrogen atom, alkyl of 1 to 6 carbon atoms or cycloalkyl of 3 to 6 carbon atoms, or wherein R^{19} and R^{20} constitute a saturated hydrocarbon bridge of 3 to 5 carbon atoms which together with the nitrogen atom between them form a heterocyclic ring, and wherein

one carbon atom in said hydrocarbon bridge is optionally replaced by -O-, -S-, S(O)-, SO_2-, -NH-, or -NMe-,

(vii) a group of the formula $-OR^{21}$, wherein R^{21} is a hydrogen atom, or a straight or branched alkyl or acyl group of 1 to 7 carbon atoms, wherein one or more hydrogen atoms of said alkyl or acyl group are optionally replaced with a group independently selected from the class consisting of -OH, -Oalkyl (wherein the alkyl moiety contains 1 to 6 carbon atoms), $-NH_2$, -NHMe and $-NMe_2$,

(viii) a group of the formula $-SR^{22}$, wherein R^{22} is a hydrogen atom, or an alkyl or acyl group of 1 to 7 carbon atoms, wherein one or more hydrogen atoms of said alkyl or acyl group are optionally replaced with a group independently selected from the class consisting of -OH, -Oalkyl (wherein the alkyl moiety is 1 to 6 carbon atoms), $-NH_2$, -NHMe and $-NMe_2$,

(ix) a group of the formula $-NR^{23}R^{24}$, wherein R^{23} and R^{24} are each, independently,

(a) a hydrogen atom,

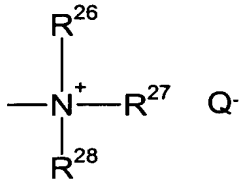
(b) straight or branched alkyl or acyl of 1 to 7 carbon atoms or cycloalkyl of 3 to 7 carbon atoms, wherein said one or more hydrogen atoms of said alkyl or acyl group are optionally replaced with a group independently selected from the class consisting of -OH, -Oalkyl (wherein the alkyl moiety is 1 to 6 carbon atoms), $-NH_2$, -NHMe and $-NMe_2$,

(c) a group of the formula $-(CH_2)_mCOOH$, wherein m is 0, 1 or 2,

(d) a group of the formula $-(CH_2)_nCOOR^{25}$, wherein n is 0, 1 or 2, and wherein R^{25} is straight or branched alkyl of 1 to 6 carbon atoms, or

(e) a group of the formula $-(CH_2)_nCONHR^{25}$, wherein n is 0, 1 or 2, and wherein R^{25} is straight or branched alkyl of 1 to 6 carbon atoms,

(x) a quaternary group of the formula



wherein R^{26}, R^{27} and R^{28} are each, independently, a branched or unbranched alkyl group of 1 to 7 carbon atoms and Q^- is a pharmaceutically acceptable counter ion,

(xi) a saturated, or partially unsaturated heterocyclic group consisting of 3 to 7 ring atoms selected from N, O, C and S, including but not limited to imidazolinyl, imidazolidinyl, pyrrolinyl, pyrrolidinyl, piperidinyl, piperazinyl, morpholinyl, thiomorpholinyl, thiazolidinyl, azepinyl, tetrahydropyranyl, tetrahydrofuranyl, benzodioxolyl, tetrahydrothiophenyl and sulfolanyl, wherein said heterocyclic group is optionally mono- or polysubstituted with oxo, and

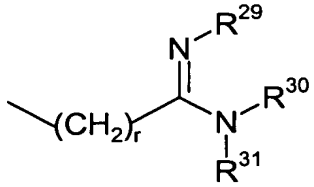
(xii) a cycloalkyl group of 3 to 7 carbon atoms,

(B) branched or unbranched carboxylic acid groups of 3 to 6 carbon atoms,

(C) branched or unbranched phosphonic acid groups of 2 to 6 carbon atoms,

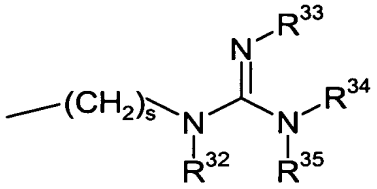
(D) branched or unbranched sulfonic acid groups of 2 to 6 carbon atoms,

(E) amidino groups of the formula



wherein r is 2, 3, 4, 5 or 6, and R^{29}, R^{30} and R^{31} are each, independently, a hydrogen atom or alkyl of 1 to 3 carbon atoms, and wherein two of R^{29}, R^{30} and R^{31} may additionally constitute a saturated hydrocarbon bridge of 3 to 5 carbon atoms which together with the nitrogen atom(s) between them form a heterocyclic ring,

(F) guanidino groups of the formula



wherein s is 2, 3, 4, 5 or 6, and R^{32}, R^{33}, R^{34} and R^{35} are each, independently, a hydrogen atom or alkyl of 1 to 3 carbon atoms, and wherein two of R^{32}, R^{33}, R^{34} and R^{35} may additionally constitute a saturated hydrocarbon bridge of 3 to 5 carbon atoms which together with the nitrogen atom(s) between them form a heterocyclic ring,

(G) aryl or heteroaryl which is selected from the class consisting of phenyl, naphthyl, indolyl, thiophenyl, pyridyl, pyrimidinyl, furyl, pyrrolyl, oxazolyl, thiazolyl, pyrazolyl, isoxazolyl, imidazolyl, isothiazolyl, oxadiazolyl, triazolyl, thiadiazolyl, pyridazinyl, pyrazinyl, triazinyl, indolyzinyl, isoindolyl, benzo[b]furanyl, benzo[b]thiophenyl, indazolyl, benzthiazolyl, benzimidazolyl, quinolinyl, isoquinolinyl, purinyl, quinolizinyl, cinnolinyl, pthalaninyl, quinoxalinyl, napthyridinyl, pteridinyl and quinazolinyl, wherein one or more hydrogen atoms of said aryl or heteroaryl group are optionally and independently replaced with:

(i) alkyl of 1 to 3 carbon atoms,

(ii) -COOH,

(iii) $-SO_2OH$,

(iv) $-PO(OH)_2$,

(v) a group of the formula $-COOR^{36}$, wherein R^{36} is straight or branched alkyl of 1 to 5 carbon atoms or cycloalkyl of 3 to 5 carbon atoms,

(vi) a group of the formula $-NR^{37}R^{38}$, wherein R^{37} and R^{38} are each, independently, a hydrogen atom, alkyl of 1 to 6 carbon atoms, cycloalkyl of 3 to 6 carbon atoms or acyl of 1 to 7 carbon atoms, or wherein R^{37} and R^{38} constitute a saturated hydrocarbon bridge of 3 to 5 carbon atoms

which together with the nitrogen atom between them form a heterocyclic ring,

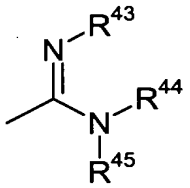
(vii) a group of the formula $-CONR^{39}R^{40}$, wherein R^{39} and R^{40} are each, independently, a hydrogen atom, alkyl of 1 to 6 carbon atoms or cycloalkyl of 3 to 6 carbon atoms, or wherein R^{39} and R^{40} constitute a saturated hydrocarbon bridge of 3 to 5 carbon atoms which together with the nitrogen atom between them form a heterocyclic ring, and wherein one carbon atom in said hydrocarbon bridge is optionally replaced by –O-, -S-, S(O)-, SO_2-, -NH-, or –NMe-,

(viii) a group of the formula $-OR^{41}$, wherein R^{41} is a hydrogen atom, or an alkyl or acyl group of 1 to 7 carbon atoms,

(ix) a group of the formula $-SR^{42}$, wherein R^{42} is a hydrogen atom, or an alkyl or acyl group of 1 to 7 carbon atoms,

(x) -CN, or

(xi) an amidino group of the formula



wherein R^{43}, R^{44} and R^{45} are each, independently, a hydrogen atom or alkyl of 1 to 3 carbon atoms, and wherein two of R^{43}, R^{44} and R^{45} may additionally constitute a saturated hydrocarbon bridge of 3 to 5 carbon atoms which together with the nitrogen atom(s) between them form a heterocyclic ring,

(H) groups of the formula $-NR^{46}R^{47}$, wherein R^{46} and R^{47} are each independently a hydrogen atom, phenyl which is optionally mono-or polysubstituted with halogen, or R^{100a}, wherein R^{100a} is as hereinbefore defined,

(I) saturated or unsaturated heterocyclic groups consisting of 3 to 7 ring atoms selected from N, O, C and S, or bicyclic heterocyclic groups consisting of 8 to

11 atoms selected from N, O, C and S, including but not limited to imidazolinyl, imidazolidinyl, pyrrolinyl, pyrrolidinyl, piperidinyl, piperazinyl, morpholinyl, thiomorpholinyl, thiazolidinyl, azepinyl, tetrahydropyranyl, tetrahydrofuranyl, benzodioxolyl, tetrahydrothiophenyl and sulfolanyl, wherein said heterocyclic group is optionally mono- or poly-substituted with moieties independently selected from the class consisting of:

(i) oxo,

(ii) $-OR^{101}$, wherein R^{101} is:

(a) a hydrogen atom,

(b) alkyl of 1 to 7 carbons, wherein any hydrogen atom of said alkyl group is optionally replaced with –OH, $-OR^{110}$ (wherein R^{110} is an alkyl moiety of 1 to 6 carbon atoms), $-NH_2$, -NHMe or $-NMe_2$,

(c) acyl of 1 to 7 carbons, wherein any hydrogen atom of said acyl group is optionally replaced with -OH, $-OR^{111}$ (wherein R^{111} is an alkyl moiety of 1 to 6 carbon atoms), $-NH_2$, -NHMe or $-NMe_2$,

(d) $-CONR^{102}R^{103}$, wherein R^{102} and R^{103} are each independently a hydrogen atom or alkyl of 1 to 7 atoms, or wherein R^{102} and R^{103} constitute a saturated hydrocarbon bridge of 3 to 5 carbon atoms which together with the nitrogen atom between them form a heterocyclic ring, and wherein one carbon atom in said hydrocarbon bridge is optionally replaced by –O-, -S-, S(O)-, SO_2-, -NH-, or -NMe-, or

(e) $-COOR^{104}$, wherein R^{104} is alkyl of 1 to 7 atoms,

(iii) $-CONR^{105}R^{106}$, wherein R^{105} and R^{106} are each independently:

(a) a hydrogen atom,

(b) straight or branched alkyl of 1 to 7 atoms or cycloalkyl of 3 to 7 atoms,

(c) benzoyl,

(d) benzyl or

(e) phenyl, wherein said phenyl ring is optionally mono- or polysubstituted with -OR^{112},wherein R^{112} is alkyl of 1 to 6 carbon atoms,

or, wherein R^{105} and R^{106} constitute a saturated hydrocarbon bridge of 3 to 5 carbon atoms which together with the nitrogen atom between them form a heterocyclic ring, and wherein one carbon atom in said hydrocarbon bridge is optionally replaced by –O-, -S-, S(O)-, SO_2-, -NH-, or –NMe-,

(iv) -$COOR^{107}$, wherein R^{107} is a hydrogen atom, or straight or branched alkyl of 1 to 7 carbon atoms ,

(v) straight or branched alkyl of 1 to 7 carbon atoms, alkenyl or alkynyl of 2 to 7 carbon atoms, or cycloalkyl of 3 to 7 carbons, wherein one or more hydrogen atoms of said alkyl, alkenyl, alkynyl or cycloalkyl group is optionally replaced with a moiety independently selected from the class consisting of:

(a) oxo,

(b) -OH,

(c) -OR^{113}, wherein R^{113} is alkyl of 1 to 6 carbon atoms,

(d) -$OCOCH_3$,

(e) -NH_2,

(f) -NHMe,

(g) -NMe_2,

(h) -CO_2H, and

(i) -CO_2 R^{114} wherein R^{114} is alkyl of 1 to 3 carbon atoms, or cycloalkyl of 3 to 7 carbons,

(vi) acyl of 1 to 7 carbon atoms, which may be straight, branched or cyclic, and wherein one or more hydrogen atoms of said acyl group is optionally replaced with a moiety independently selected from the class consisting of:

(a) -OH,

(b) -OR^{115}, wherein R^{115} is alkyl of 1 to 6 carbon atoms,

(c) -NH_2,

(d) -NHMe,

(e) -NMe_2,

(f) -NHCOMe,

(g) oxo,

(h) -CO_2 R^{116}, wherein R^{116} is alkyl of 1 to 3 carbon atoms,

(i) -CN,

(j) the halogen atoms,

(k) heterocycles selected from the class consisting of imidazolinyl, imidazolidinyl, pyrrolinyl, pyrrolidinyl, piperidinyl, piperazinyl, morpholinyl, thiomorpholinyl, thiazolidinyl, azepinyl, tetrahydropyranyl, tetrahydrofuranyl, benzodioxolyl, tetrahydrothiophenyl and sulfolanyl, and

(l) aryl or heteroaryl selected from the class consisting of phenyl, naphthyl, indolyl, thiophenyl, pyridyl, pyrimidinyl, furyl, pyrrolyl, oxazolyl, thiazolyl, pyrazolyl, isoxazolyl, imidazolyl, isothiazolyl, oxadiazolyl, triazolyl, thiadiazolyl, pyridazinyl, pyrazinyl, triazinyl, indolyzinyl, isoindolyl, benzo[b]furanyl, benzo[b]thiophenyl, indazolyl, benzthiazolyl, benzimidazolyl, quinolinyl, isoquinolinyl, purinyl, quinolizinyl, cinnolinyl, pthalaninyl, quinoxalinyl, napthyridinyl, pteridinyl and quinazolinyl,

(vii) -SO_2R^{108}, wherein R^{108} is:

(a) aryl or heteroaryl which is selected from the group consisting of phenyl, naphthyl, indolyl, thiophenyl, pyridyl, pyrimidinyl, furyl, pyrrolyl, oxazolyl, thiazolyl, pyrazolyl, isoxazolyl, imidazolyl, isothiazolyl, oxadiazolyl, triazolyl, thiadiazolyl, pyridazinyl, pyrazinyl, triazinyl, indolyzinyl, isoindolyl, benzo[b]furanyl, benzo[b]thiophenyl, indazolyl, benzthiazolyl, benzimidazolyl, quinolinyl, isoquinolinyl, purinyl, quinolizinyl, cinnolinyl, pthalaninyl, quinoxalinyl, napthyridinyl, pteridinyl and

quinazolinyl, wherein said aryl or heteroaryl moiety is optionally substituted with one or more moieties selected from the class consisting of the halogen atoms, straight or branched alkyl of 1 to 6 carbons, and -OR^{117} (wherein R^{117} is hydrogen or alkyl of 1 to 6 carbon atoms),

(b) a heterocyclic group selected from the class consisting of imidazolinyl, imidazolidinyl, pyrrolinyl, pyrrolidinyl, piperidinyl, piperazinyl, morpholinyl, thiomorpholinyl, thiazolidinyl, azepinyl, tetrahydropyranyl, tetrahydrofuranyl, benzodioxolyl, tetrahydrothiophenyl and sulfolanyl, wherein said heterocyclic group is optionally substituted with one or more moieties selected from the class consisting of the halogen atoms, straight or branched alkyl of 1 to 6 carbons, and -OR^{118} (wherein R^{118} is hydrogen or alkyl of 1 to 6 carbon atoms), or

(c) straight or branched alkyl of 1 to 7 atoms, wherein said alkyl moiety is optionally substituted with one or more moieties selected from the class consisting of the halogen atoms, straight or branched alkyl of 1 to 6 carbons, and –OR^{119} (wherein R^{119} is hydrogen or alkyl of 1 to 6 carbon atoms),

(viii) -COR^{109}, wherein R^{109} is:

(a) aryl or heteroaryl which is selected from the class consisting of phenyl, naphthyl, indolyl, thiophenyl, pyridyl, pyrimidinyl, furyl, pyrrolyl, oxazolyl, thiazolyl, pyrazolyl, isoxazolyl, imidazolyl, isothiazolyl, oxadiazolyl, triazolyl, thiadiazolyl, pyridazinyl, pyrazinyl, triazinyl, indolyzinyl, isoindolyl, benzo[b]furanyl, benzo[b]thiophenyl, indazolyl, benzthiazolyl, benzimidazolyl, quinolinyl, isoquinolinyl, purinyl, quinolizinyl, cinnolinyl, pthalaninyl, quinoxalinyl, napthyridinyl, pteridinyl and quinazolinyl, wherein said aryl or heteroaryl moiety is optionally substituted with one or more moieties selected from the class

consisting of the halogen atoms, straight or branched alkyl of 1 to 6 carbons, and -OR^{120} (wherein R^{120} is hydrogen or alkyl of 1 to 6 carbon atoms),

(b) a heterocyclic group selected from the class consisting of imidazolinyl, imidazolidinyl, pyrrolinyl, pyrrolidinyl, piperidinyl, piperazinyl, morpholinyl, thiomorpholinyl, thiazolidinyl, azepinyl, tetrahydropyranyl, tetrahydrofuranyl, benzodioxolyl, tetrahydrothiophenyl and sulfolanyl, wherein said heterocyclyl is optionally substituted with one or more halogen, straight or branched alkyl of 1 to 6 carbons, or -OR^{121} (wherein R^{121} is hydrogen or alkyl of 1 to 6 carbon atoms), or

(c) straight or branched alkyl of 1 to 7 atoms, wherein said alkyl moiety is optionally substituted with one or more moieties selected from the class consisting of the halogen atoms, straight or branched alkyl of 1 to 6 carbons, and -OR^{122} (wherein R^{122} is hydrogen or alkyl of 1 to 6 carbon atoms),

(ix) -CHO,

(x) the halogen atoms, and

(xi) aryl or heteroaryl which is selected from the class consisting of phenyl, naphthyl, indolyl, thiophenyl, pyridyl, pyrimidinyl, furyl, pyrrolyl, oxazolyl, thiazolyl, pyrazolyl, isoxazolyl, imidazolyl, isothiazolyl, oxadiazolyl, triazolyl, thiadiazolyl, pyridazinyl, pyrazinyl, triazinyl, indolyzinyl, isoindolyl, benzo[b]furanyl, benzo[b]thiophenyl, indazolyl, benzthiazolyl, benzimidazolyl, quinolinyl, isoquinolinyl, purinyl, quinolizinyl, cinnolinyl, pthalaninyl, quinoxalinyl, napthyridinyl, pteridinyl and quinazolinyl,

(J) the halogen atoms, and

(K) -CN and,

wherein R^{1a} is R^{100a};

X is an oxygen or sulfur atom;

R^3 is:

(A) a hydrogen atom, or

(B) branched or unbranched alkyl of 1 to 3 carbon atoms or cycloalkyl of 3 to 5 carbon atoms wherein said alkyl or cycloalkyl group is optionally substituted with:

(i) a group of the formula $-OR^{48}$, wherein R^{48} is a hydrogen atom, or an alkyl or acyl group of 1 to 7 carbon atoms, or

(ii) a group of the formula $-NR^{49}R^{50}$, wherein R^{49} and R^{50} are each, independently, a hydrogen atom, alkyl of 1 to 2 carbon atoms, or acyl of 1 to 2 carbon atoms;

R^4 is a group of the formula $-CH_2R^{55}$, wherein,

R^{55} is:

aryl or heteroaryl which is selected from the class consisting of phenyl, naphthyl, indolyl, thiophenyl, pyridyl, pyrimidinyl, furyl, pyrrolyl, oxazolyl, thiazolyl, pyrazolyl, isoxazolyl, imidazolyl, isothiazolyl, oxadiazolyl, triazolyl, thiadiazolyl, pyridazinyl, pyrazinyl, triazinyl, indolyzinyl, isoindolyl, benzo[b]furanyl, benzo[b]thiophenyl, indazolyl, benzthiazolyl, benzimidazolyl, quinolinyl, isoquinolinyl, purinyl, quinolizinyl, cinnolinyl, pthalaninyl, quinoxalinyl, napthyridinyl, pteridinyl and quinazolinyl, wherein one or more of the hydrogen atoms of said aryl or heteroaryl group is optionally and independently replaced with:

(A) R^{59a}, which is aryl or heteroaryl selected from the class consisting of phenyl, naphthyl, indolyl, thiophenyl, pyridyl, pyrimidinyl, furyl, pyrrolyl, oxazolyl, thiazolyl, pyrazolyl, isoxazolyl, imidazolyl, isothiazolyl, oxadiazolyl, triazolyl, thiadiazolyl, pyridazinyl, pyrazinyl, triazinyl, indolyzinyl, isoindolyl, benzo[b]furanyl, benzo[b]thiophenyl, indazolyl, benzthiazolyl, benzimidazolyl, quinolinyl, isoquinolinyl, purinyl, quinolizinyl, cinnolinyl, pthalaninyl, quinoxalinyl, napthyridinyl, pteridinyl and quinazolinyl, wherein one or more of the hydrogen atoms

of said aryl or heteroaryl group is optionally and independently replaced with:

(i) branched or unbranched alkyl of 1 to 6 carbon atoms or cycloalkyl of 3 to 6 carbon atoms, which alkyl or cycloakyl group is optionally mono- or polysubstituted with halogen or oxo,

(ii) a group of the formula $-COOR^{60}$, wherein R^{60} is straight or branched alkyl of 1 to 5 carbon atoms or cycloalkyl of 3 to 5 carbon atoms,

(iii) a group of the formula $-NR^{61}R^{62}$, wherein R^{61} and R^{62} are each, independently, a hydrogen atom, alkyl or fluoroalkyl of 1 to 6 carbon atoms, cycloalkyl of 3 to 6 carbon atoms or acyl of 1 to 7 carbon atoms, or wherein R^{61} and R^{62} constitute a saturated hydrocarbon bridge of 3 to 5 carbon atoms which together with the nitrogen atom between them form a heterocyclic ring,

(iv) a group of the formula $-CONR^{63}R^{64}$, wherein R^{63} and R^{64} are each, independently, a hydrogen atom, alkyl or fluoroalkyl of 1 to 6 carbon atoms or cycloalkyl of 3 to 6 carbon atoms, or wherein R^{63} and R^{64} constitute a saturated hydrocarbon bridge of 3 to 5 carbon atoms which together with the nitrogen atom between them form a heterocyclic ring,

(v) a group of the formula $-OR^{65}$, wherein R^{65} is a hydrogen atom, or an alkyl, fluoroalkyl or acyl group of 1 to 7 carbon atoms,

(vi) a group of the formula $-SR^{66}$, wherein R^{66} is a hydrogen atom, or an alkyl , fluoroalkyl or acyl group of 1 to 7 carbon atoms,

(vii) -CN,

(viii) nitro, or

(ix) halogen,

(B) methyl, which is optionally mono- or polysubstituted with fluorine atoms and additionally is optionally monosubstituted with R^{59a},

(C) branched or unbranched alkyl of 2 to 6 carbon atoms or cycloalkyl of 3 to 6 carbon atoms, which alkyl or cycloakyl group is optionally mono- or polysubstituted with halogen or oxo,

(D) a group of the formula $-COOR^{67}$, wherein R^{67} is straight or branched alkyl of 1 to 5 carbon atoms or cycloalkyl of 3 to 5 carbon atoms,

(E) a group of the formula $-NR^{68}R^{69}$, wherein R^{68} and R^{69} are each, independently, a hydrogen atom, alkyl or fluoroalkyl of 1 to 6 carbon atoms, cycloalkyl of 3 to 6 carbon atoms or acyl of 1 to 7 carbon atoms, or wherein R^{68} and R^{69} constitute a saturated hydrocarbon bridge of 3 to 5 carbon atoms which together with the nitrogen atom between them form a heterocyclic ring, and wherein one of R^{68} and R^{69} may additionally be the group R^{59a},

(F) a group of the formula $-CONR^{70}R^{71}$, wherein R^{70} and R^{71} are each, independently, a hydrogen atom, alkyl or fluoroalkyl of 1 to 6 carbon atoms or cycloalkyl of 3 to 6 carbon atoms, or wherein R^{70} and R^{71} constitute a saturated hydrocarbon bridge of 3 to 5 carbon atoms which together with the nitrogen atom between them form a heterocyclic ring, and wherein one of R^{70} and R^{71} may additionally be the group R^{59a},

(G) a group of the formula $-COR^{72}$, wherein R^{72} is a hydrogen atom, straight or branched alkyl of 1 to 5 carbon atoms, cycloalkyl of 3 to 5 carbon atoms or R^{59a},

(H) a group of the formula $-OR^{73}$, wherein R^{73} is a hydrogen atom, an alkyl , fluoroalkyl or acyl group of 1 to 7 carbon atoms, or R^{59a},

(I) a group of the formula $-SR^{74}$, wherein R^{74} is a hydrogen atom, an alkyl, fluoroalkyl or acyl group of 1 to 7 carbon atoms, or R^{59a},

(J) -CN,

(K) nitro, or

(L) halogen;

R^5 is Cl or trifluoromethyl;

Z is =N- or =C(R^6)- wherein R^6 is a hydrogen, fluorine, chlorine, bromine or iodine atom, methyl or trifluoromethyl; and,

R^7 is a hydrogen, fluorine, chlorine, bromine or iodine atom, methyl, -CN, nitro or trifluoromethyl, with the condition that when Z is =N- or =C(H)-, R^7 is chlorine, trifluoromethyl, -CN or nitro;

or a pharmaceutically acceptable salt thereof.

3. A compound of the formula I, as set forth in claim 1, wherein:

A^1 is =N- or =C(H)-;

A^2 is =N-, or =C(H)-;

D is =N-, =C(R^1)-, =C(H)-, =C(SO_2R^1)-, =C(C(O)H)- or =C(C(O)R^1)-, wherein R^1 is selected from the class consisting of:

(A) $-R^{100b}$, which is:

branched or unbranched alkyl of 1 to 6 carbon atoms, alkenyl of 2 to 6 carbon atoms or cycloalkyl or cycloalkenyl of 3 to 6 carbon atoms, in which alkyl, alkenyl, cycloalkyl or cycloalkenyl group one or more hydrogen atoms are optionally and independently replaced with:

(i) oxo,

(ii) phenyl, wherein one hydrogen atom of said phenyl group is optionally replaced with:

(a) alkyl of 1 to 3 carbon atoms,

(b) -COOH,

(c) $-SO_2OH$,

(d) $-PO(OH)_2$,

(e) a group of the formula $-COOR^8$, wherein R^8 is straight or branched alkyl of 1 to 5 carbon atoms or cycloalkyl of 3 to 5 carbon atoms,

(f) a group of the formula $-NR^9R^{10}$, wherein R^9 and R^{10} are each independently a hydrogen atom, alkyl of 1 to 6 carbon atoms, cycloalkyl of 3 to 6 carbon atoms or acyl of 1 to 7 carbon atoms, or wherein R^9 and R^{10} constitute a saturated hydrocarbon bridge of 3 to 5 carbon atoms which together with the nitrogen atom between them form a heterocyclic ring,

(g) a group of the formula $-CONR^{11}R^{12}$, wherein R^{11} and R^{12} are each independently a hydrogen atom, alkyl of 1 to 6 carbon atoms or cycloalkyl of 3 to 6 carbon atoms, or wherein R^{11} and R^{12}

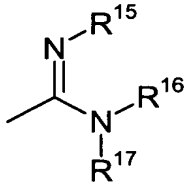
constitute a saturated hydrocarbon bridge of 3 to 5 carbon atoms which together with the nitrogen atom between them form a heterocyclic ring, and wherein one carbon atom in said hydrocarbon bridge is optionally replaced by –O-, -NH-, or –NMe-,

(h) a group of the formula $-OR^{13}$, wherein R^{13} is a hydrogen atom, or an alkyl or acyl group of 1 to 7 carbon atoms,

(i) a group of the formula $-SR^{14}$, wherein R^{14} is a hydrogen atom, or an alkyl or acyl group of 1 to 7 carbon atoms,

(j) -CN, or

(k) an amidino group of the formula



wherein R^{15}, R^{16} and R^{17} are each, independently, a hydrogen atom or alkyl of 1 to 3 carbon atoms and wherein two of R^{15}, R^{16} and R^{17} may additionally constitute a saturated hydrocarbon bridge of 3 to 5 carbon atoms which together with the nitrogen atom(s) between them form a heterocyclic ring,

(l) a group of the formula –NHCONHalkyl, wherein the alkyl moiety contains 1 to 3 carbon atoms,

(m) a group of the formula –NHCOOalkyl, wherein the alkyl moiety contains 1 to 3 carbon atoms,

(iii) a group of the formula $-COOR^{18}$, wherein R^{18} is straight or branched alkyl of 1 to 7 carbon atoms or cycloalkyl of 3 to 6 carbon atoms,

(iv) a group of the formula $-CONR^{19}R^{20}$, wherein R^{19} and R^{20} are each, independently, a hydrogen atom, alkyl of 1 to 6 carbon atoms or cycloalkyl of 3 to 6 carbon atoms, or wherein R^{19} and R^{20} constitute a saturated hydrocarbon bridge of 3 to 5 carbon atoms which together with the nitrogen atom between them form a heterocyclic ring, and wherein

one carbon atom in said hydrocarbon bridge is optionally replaced by -O-, -NH-, or -NMe-,

(v) a group of the formula $-OR^{21}$, wherein R^{21} is a hydrogen atom, or a straight or branched alkyl or acyl group of 1 to 7 carbon atoms, wherein one or more hydrogen atoms of said alkyl or acyl group are optionally replaced with a group independently selected from the class consisting of -OH, -Oalkyl (wherein the alkyl moiety contains 1 to 6 carbon atoms), $-NH_2$, -NHMe and $-NMe_2$,

(vi) a group of the formula $-NR^{23}R^{24}$, wherein R^{23} and R^{24} are each, independently,

(a) a hydrogen atom,

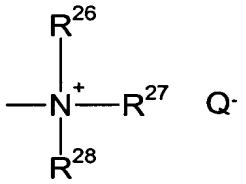
(b) straight or branched alkyl or acyl of 1 to 7 carbon atoms or cycloalkyl of 3 to 7 carbon atoms, wherein said one or more hydrogen atoms of said alkyl or acyl group are optionally replaced with a group independently selected from the class consisting of -OH, -Oalkyl (wherein the alkyl moiety is 1 to 6 carbon atoms), $-NH_2$, -NHMe and $-NMe_2$,

(c) a group of the formula $-(CH_2)_mCOOH$, wherein m is 0, 1 or 2,

(d) a group of the formula $-(CH_2)_nCOOR^{25}$, wherein n is 0, 1 or 2, and wherein R^{25} is straight or branched alkyl of 1 to 6 carbon atoms, or

(e) a group of the formula $-(CH_2)_nCONHR^{25}$, wherein n is 0, 1 or 2, and wherein R^{25} is straight or branched alkyl of 1 to 6 carbon atoms,

(vii) a quaternary group of the formula



wherein R^{26}, R^{27} and R^{28} are each, independently, a branched or

unbranched alkyl group of 1 to 7 carbon atoms and Q^- a pharmaceutically acceptable counter ion, or

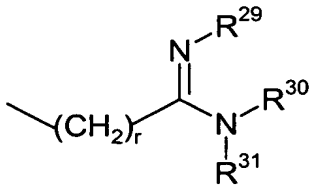
(viii) a cycloalkyl group of 3 to 7 carbon atoms,

(B) branched or unbranched carboxylic acid groups of 3 to 6 carbon atoms,

(C) branched or unbranched phosphonic acid groups of 2 to 6 carbon atoms,

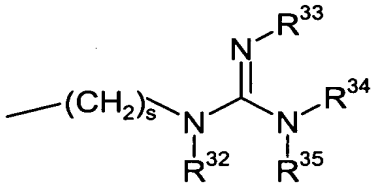
(D) branched or unbranched sulfonic acid groups of 2 to 6 carbon atoms,

(E) amidino groups of the formula



wherein r is 2, 3, 4, 5 or 6, and R^{29}, R^{30} and R^{31} are each, independently, a hydrogen atom or alkyl of 1 to 3 carbon atoms, and wherein two of R^{29}, R^{30} and R^{31} may additionally constitute a saturated hydrocarbon bridge of 3 to 5 carbon atoms which together with the nitrogen atom(s) between them form a heterocyclic ring,

(F) guanidino groups of the formula



wherein s is 2, 3, 4, 5 or 6, and R^{32}, R^{33}, R^{34} and R^{35} are each, independently, a hydrogen atom or alkyl of 1 to 3 carbon atoms, and wherein two of R^{32}, R^{33}, R^{34} and R^{35} may additionally constitute a saturated hydrocarbon bridge of 3 to 5 carbon atoms which together with the nitrogen atom(s) between them form a heterocyclic ring,

(G) phenyl, wherein one or more hydrogen atoms of said phenyl group are optionally and independently replaced with:

(i) alkyl of 1 to 3 carbon atoms,

(ii) -COOH,

(iii) $-SO_2OH$,

(iv) $-PO(OH)_2$,

(v) a group of the formula $-COOR^{36}$, wherein R^{36} is straight or branched alkyl of 1 to 5 carbon atoms or cycloalkyl of 3 to 5 carbon atoms,

(vi) a group of the formula $-NR^{37}R^{38}$, wherein R^{37} and R^{38} are each, independently, a hydrogen atom, alkyl of 1 to 6 carbon atoms, cycloalkyl of 3 to 6 carbon atoms or acyl of 1 to 7 carbon atoms, or wherein R^{37} and R^{38} constitute a saturated hydrocarbon bridge of 3 to 5 carbon atoms which together with the nitrogen atom between them form a heterocyclic ring,

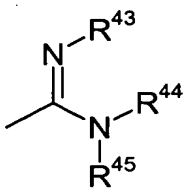
(vii) a group of the formula $-CONR^{39}R^{40}$, wherein R^{39} and R^{40} are each, independently, a hydrogen atom, alkyl of 1 to 6 carbon atoms or cycloalkyl of 3 to 6 carbon atoms, or wherein R^{39} and R^{40} constitute a saturated hydrocarbon bridge of 3 to 5 carbon atoms which together with the nitrogen atom between them form a heterocyclic ring, and wherein one carbon atom in said hydrocarbon bridge is optionally replaced by –O-, -NH-, or –NMe-,

(viii) a group of the formula $-OR^{41}$, wherein R^{41} is a hydrogen atom, or an alkyl or acyl group of 1 to 7 carbon atoms,

(ix) a group of the formula $-SR^{42}$, wherein R^{42} is a hydrogen atom, or an alkyl or acyl group of 1 to 7 carbon atoms,

(x) -CN, or

(xi) an amidino group of the formula



wherein R^{43}, R^{44} and R^{45} are each, independently, a hydrogen atom or alkyl of 1 to 3 carbon atoms, and wherein two of R^{43}, R^{44} and R^{45} may

additionally constitute a saturated hydrocarbon bridge of 3 to 5 carbon atoms which together with the nitrogen atom(s) between them form a heterocyclic ring,

(H) groups of the formula $-NR^{46}R^{47}$, wherein R^{46} and R^{47} are each independently a hydrogen atom, phenyl which is optionally mono-or polysubstituted with halogen, or R^{100b}, wherein R^{100b} is as hereinbefore defined,

(I) saturated or unsaturated heterocyclic groups selected from the class consisting of imidazolinyl, imidazolidinyl, pyrrolinyl, pyrrolidinyl, piperidinyl, piperazinyl, morpholinyl, thiomorpholinyl, thiazolidinyl, azepinyl, tetrahydropyranyl, tetrahydrofuranyl, benzodioxolyl, tetrahydrothiophenyl and sulfolanyl, wherein said heterocyclic group is optionally mono- or poly-substituted with moieties independently selected from the class consisting of:

(i) oxo,

(ii) $-OR^{101}$, wherein R^{101} is:

(a) a hydrogen atom,

(b) alkyl of 1 to 7 carbons, wherein any hydrogen atom of said alkyl group is optionally replaced with –OH, $-OR^{110}$ (wherein R^{110} is an alkyl moiety of 1 to 6 carbon atoms), $-NH_2$, -NHMe or $-NMe_2$,

(c) acyl of 1 to 7 carbons, wherein any hydrogen atom of said acyl group is optionally replaced with -OH, $-OR^{111}$ (wherein R^{111} is an alkyl moiety of 1 to 6 carbon atoms), $-NH_2$, -NHMe or $-NMe_2$,

(d) $-CONR^{102}R^{103}$, wherein R^{102} and R^{103} are each independently a hydrogen atom or alkyl of 1 to 7 atoms, or wherein R^{102} and R^{103} constitute a saturated hydrocarbon bridge of 3 to 5 carbon atoms which together with the nitrogen atom between them form a heterocyclic ring, and wherein one carbon atom in said hydrocarbon bridge is optionally replaced by –O-, -NH-, or -NMe-, or

(e) $-COOR^{104}$, wherein R^{104} is alkyl of 1 to 7 atoms,

(iii) -CONR^{105}R^{106}, wherein R^{105} and R^{106} are each independently:

(a) a hydrogen atom,

(b) straight or branched alkyl of 1 to 7 atoms or cycloalkyl of 3 to 7 atoms,

(c) benzoyl,

(d) benzyl or

(e) phenyl, wherein said phenyl ring is optionally mono- or polysubstituted with -OR^{112},wherein R^{112} is alkyl of 1 to 6 carbon atoms,

or, wherein R^{105} and R^{106} constitute a saturated hydrocarbon bridge of 3 to 5 carbon atoms which together with the nitrogen atom between them form a heterocyclic ring, and wherein one carbon atom in said hydrocarbon bridge is optionally replaced by –O-, -NH-, or –NMe-,

(iv) -COOR^{107}, wherein R^{107} is a hydrogen atom, or straight or branched alkyl of 1 to 7 carbon atoms ,

(v) straight or branched alkyl of 1 to 7 carbon atoms, alkenyl or alkynyl of 2 to 7 carbon atoms, or cycloalkyl of 3 to 7 carbons, wherein one or more hydrogen atoms of said alkyl, alkenyl, alkynyl or cycloalkyl group is optionally replaced with a moiety independently selected from the class consisting of:

(a) oxo,

(b) -OH,

(c) -OR^{113}, wherein R^{113} is alkyl of 1 to 6 carbon atoms,

(d) -OCOCH$_3$,

(e) -NH$_2$,

(f) -NHMe,

(g) -NMe$_2$,

(h) -CO$_2$H, and

(i) -CO$_2$ R^{114} wherein R^{114} is alkyl of 1 to 3 carbon atoms, or cycloalkyl of 3 to 7 carbons,

(vi) acyl of 1 to 7 carbon atoms, which may be straight, branched or cyclic, and wherein one or more hydrogen atoms of said acyl group is optionally replaced with a moiety independently selected from the class consisting of:

(a) -OH,

(b) $-OR^{115}$, wherein R^{115} is alkyl of 1 to 6 carbon atoms,

(c) $-NH_2$,

(d) -NHMe,

(e) $-NMe_2$,

(f) -NHCOMe,

(g) oxo,

(h) $-CO_2 R^{116}$, wherein R^{116} is alkyl of 1 to 3 carbon atoms,

(i) -CN,

(j) the halogen atoms,

(k) heterocycles selected from the class consisting of imidazolinyl, imidazolidinyl, pyrrolinyl, pyrrolidinyl, piperidinyl, piperazinyl, morpholinyl, thiomorpholinyl, thiazolidinyl, azepinyl, tetrahydropyranyl, tetrahydrofuranyl, benzodioxolyl, tetrahydrothiophenyl and sulfolanyl, and

(l) aryl or heteroaryl selected from the class consisting of phenyl, naphthyl, indolyl, thiophenyl, pyridyl, pyrimidinyl, furyl, pyrrolyl, oxazolyl, thiazolyl, pyrazolyl, isoxazolyl, imidazolyl, isothiazolyl, oxadiazolyl, triazolyl, thiadiazolyl, pyridazinyl, pyrazinyl, triazinyl, indolyzinyl, isoindolyl, benzo[b]furanyl, benzo[b]thiophenyl, indazolyl, benzthiazolyl, benzimidazolyl, quinolinyl, isoquinolinyl, purinyl, quinolizinyl, cinnolinyl, pthalaninyl, quinoxalinyl, napthyridinyl, pteridinyl and quinazolinyl,

(vii) $-SO_2R^{108}$, wherein R^{108} is:

(a) aryl or heteroaryl which is selected from the group consisting of phenyl, naphthyl, indolyl, thiophenyl, pyridyl, pyrimidinyl, furyl, pyrrolyl, oxazolyl, thiazolyl, pyrazolyl, isoxazolyl, imidazolyl,

isothiazolyl, oxadiazolyl, triazolyl, thiadiazolyl, pyridazinyl, pyrazinyl, triazinyl, indolyzinyl, isoindolyl, benzo[b]furanyl, benzo[b]thiophenyl, indazolyl, benzthiazolyl, benzimidazolyl, quinolinyl, isoquinolinyl, purinyl, quinolizinyl, cinnolinyl, pthalaninyl, quinoxalinyl, napthyridinyl, pteridinyl and quinazolinyl, wherein said aryl or heteroaryl moiety is optionally substituted with one or more moieties selected from the class consisting of the halogen atoms, straight or branched alkyl of 1 to 6 carbons, and -OR^{117} (wherein R^{117} is hydrogen or alkyl of 1 to 6 carbon atoms),

(b) a heterocyclic group selected from the class consisting of imidazolinyl, imidazolidinyl, pyrrolinyl, pyrrolidinyl, piperidinyl, piperazinyl, morpholinyl, thiomorpholinyl, thiazolidinyl, azepinyl, tetrahydropyranyl, tetrahydrofuranyl, benzodioxolyl, tetrahydrothiophenyl and sulfolanyl, wherein said heterocyclic group is optionally substituted with one or more moieties selected from the class consisting of the halogen atoms, straight or branched alkyl of 1 to 6 carbons, and -OR^{118} (wherein R^{118} is hydrogen or alkyl of 1 to 6 carbon atoms), or

(c) straight or branched alkyl of 1 to 7 atoms, wherein said alkyl moiety is optionally substituted with one or more moieties selected from the class consisting of the halogen atoms, straight or branched alkyl of 1 to 6 carbons, and –OR^{119} (wherein R^{119} is hydrogen or alkyl of 1 to 6 carbon atoms),

(viii) -COR^{109}, wherein R^{109} is:

(a) aryl or heteroaryl which is selected from the class consisting of phenyl, naphthyl, indolyl, thiophenyl, pyridyl, pyrimidinyl, furyl, pyrrolyl, oxazolyl, thiazolyl, pyrazolyl, isoxazolyl, imidazolyl, isothiazolyl, oxadiazolyl, triazolyl, thiadiazolyl, pyridazinyl, pyrazinyl, triazinyl, indolyzinyl, isoindolyl, benzo[b]furanyl,

benzo[b]thiophenyl, indazolyl, benzthiazolyl, benzimidazolyl, quinolinyl, isoquinolinyl, purinyl, quinolizinyl, cinnolinyl, pthalaninyl, quinoxalinyl, napthyridinyl, pteridinyl and quinazolinyl, wherein said aryl or heteroaryl moiety is optionally substituted with one or more moieties selected from the class consisting of the halogen atoms, straight or branched alkyl of 1 to 6 carbons, and -OR^{120} (wherein R^{120} is hydrogen or alkyl of 1 to 6 carbon atoms),

(b) a heterocyclic group selected from the class consisting of imidazolinyl, imidazolidinyl, pyrrolinyl, pyrrolidinyl, piperidinyl, piperazinyl, morpholinyl, thiomorpholinyl, thiazolidinyl, azepinyl, tetrahydropyranyl, tetrahydrofuranyl, benzodioxolyl, tetrahydrothiophenyl and sulfolanyl, wherein said heterocyclyl is optionally substituted with one or more halogen, straight or branched alkyl of 1 to 6 carbons, or -OR^{121} (wherein R^{121} is hydrogen or alkyl of 1 to 6 carbon atoms), or

(c) straight or branched alkyl of 1 to 7 atoms, wherein said alkyl moiety is optionally substituted with one or more moieties selected from the class consisting of the halogen atoms, straight or branched alkyl of 1 to 6 carbons, and -OR^{122} (wherein R^{122} is hydrogen or alkyl of 1 to 6 carbon atoms),

(ix) -CHO,

(x) the halogen atoms, and

(xi) aryl or heteroaryl which is selected from the class consisting of phenyl, naphthyl, indolyl, thiophenyl, pyridyl, pyrimidinyl, furyl, pyrrolyl, oxazolyl, thiazolyl, pyrazolyl, isoxazolyl, imidazolyl, isothiazolyl, oxadiazolyl, triazolyl, thiadiazolyl, pyridazinyl, pyrazinyl, triazinyl, indolyzinyl, isoindolyl, benzo[b]furanyl, benzo[b]thiophenyl, indazolyl, benzthiazolyl, benzimidazolyl, quinolinyl, isoquinolinyl, purinyl,

quinolizinyl, cinnolinyl, pthalaninyl, quinoxalinyl, napthyridinyl, pteridinyl and quinazolinyl,

(J) the halogen atoms, and

(K) -CN;

X is an oxygen atom;

R^3 is branched or unbranched alkyl of 1 to 3 carbon atoms;

R^4 is a group of the formula $-CH_2R^{55}$, wherein,

R^{55} is:

aryl or heteroaryl which is selected from the class consisting of phenyl, pyridyl, and pyrimidinyl, wherein one or more of the hydrogen atoms of said aryl or heteroaryl group is optionally and independently replaced with:

(A) R^{59b}, which is aryl or heteroaryl selected from the class consisting of phenyl, thiophenyl, pyridyl, pyrimidinyl, furyl, pyrrolyl, oxazolyl,and thiazolyl, wherein one of the hydrogen atoms of said aryl or heteroaryl group is optionally replaced with:

(i) branched or unbranched alkyl of 1 to 6 carbon atoms or cycloalkyl of 3 to 6 carbon atoms, which alkyl or cycloakyl group is optionally mono- or polysubstituted with halogen or oxo,

(ii) -CN,

(iii) nitro, or

(iv) halogen,

(B) methyl, which is optionally trisubstituted with fluorine atoms or is optionally monosubstituted with R^{59b},

(C) branched or unbranched alkyl of 2 to 6 carbon atoms or cycloalkyl of 3 to 6 carbon atoms, which alkyl or cycloakyl group is optionally monosubstituted with halogen or oxo,

(D) a group of the formula $-COOR^{67}$, wherein R^{67} is straight or branched alkyl of 1 to 5 carbon atoms or cycloalkyl of 3 to 5 carbon atoms,

(E) a group of the formula $-COR^{72}$, wherein R^{72} is a hydrogen atom, straight or branched alkyl of 1 to 5 carbon atoms, cycloalkyl of 3 to 5 carbon atoms or R^{59b},

(F) a group of the formula $-OR^{73}$, wherein R^{73} is a hydrogen atom, an alkyl , fluoroalkyl or acyl group of 1 to 7 carbon atoms, or R^{59b},

(G) -CN,

(H) nitro, or

(I) halogen;

R^5 is Cl;

Z is =C(H)-; and,

R^7 is Cl;

or a pharmaceutically acceptable salt thereof.

4. A compound of the formula I, as set forth in claim 1, wherein:

A^1 is =N-;

A^2 is =C(H)-;

D is $=C(R^1)-$, =C(H)-, $=C(SO_2R^1)-$, =C(C(O)H)- or $=C(COR^1)-$, wherein R^1 is selected from the class consisting of:

(A) $-R^{100c}$, which is:

branched or unbranched alkyl of 1 to 6 carbon atoms, alkenyl of 2 to 6 carbon atoms or cycloalkyl or cycloalkenyl of 3 to 6 carbon atoms, in which alkyl, alkenyl, cycloalkyl or cycloalkenyl group one or more hydrogen atoms are optionally and independently replaced with:

(i) oxo,

(ii) phenyl, wherein one hydrogen atom of said phenyl group is optionally replaced with:

(a) alkyl of 1 to 3 carbon atoms,

(b) -COOH,

(c) $-SO_2OH$,

(d) $-PO(OH)_2$,

(e) a group of the formula $-COOR^8$, wherein R^8 is straight or branched alkyl of 1 to 5 carbon atoms or cycloalkyl of 3 to 5 carbon atoms,

(f) a group of the formula $-NR^9R^{10}$, wherein R^9 and R^{10} are each independently a hydrogen atom, alkyl of 1 to 6 carbon atoms, cycloalkyl of 3 to 6 carbon atoms or acyl of 1 to 7 carbon atoms, or wherein R^9 and R^{10} constitute a saturated hydrocarbon bridge of 3 to 5 carbon atoms which together with the nitrogen atom between them form a heterocyclic ring,

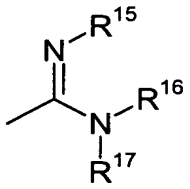
(g) a group of the formula $-CONR^{11}R^{12}$, wherein R^{11} and R^{12} are each independently a hydrogen atom, alkyl of 1 to 6 carbon atoms or cycloalkyl of 3 to 6 carbon atoms, or wherein R^{11} and R^{12} constitute a saturated hydrocarbon bridge of 3 to 5 carbon atoms which together with the nitrogen atom between them form a heterocyclic ring, and wherein one carbon atom in said hydrocarbon bridge is optionally replaced by –O-, -NH-, or –NMe-,

(h) a group of the formula $-OR^{13}$, wherein R^{13} is a hydrogen atom, or an alkyl or acyl group of 1 to 7 carbon atoms,

(i) a group of the formula $-SR^{14}$, wherein R^{14} is a hydrogen atom, or an alkyl or acyl group of 1 to 7 carbon atoms,

(j) -CN, or

(k) an amidino group of the formula



wherein R^{15}, R^{16} and R^{17} are each, independently, a hydrogen

atom or alkyl of 1 to 3 carbon atoms and wherein two of R^{15}, R^{16} and R^{17} may additionally constitute a saturated hydrocarbon bridge of 3 to 5 carbon atoms which together with the nitrogen atom(s) between them form a heterocyclic ring,

(l) a group of the formula –NHCONHalkyl, wherein the alkyl moiety contains 1 to 3 carbon atoms,

(m) a group of the formula –NHCOOalkyl, wherein the alkyl moiety contains 1 to 3 carbon atoms,

(iii) a group of the formula –$COOR^{18}$, wherein R^{18} is straight or branched alkyl of 1 to 7 carbon atoms or cycloalkyl of 3 to 6 carbon atoms,

(iv) a group of the formula –$CONR^{19}R^{20}$, wherein R^{19} and R^{20} are each, independently, a hydrogen atom, alkyl of 1 to 6 carbon atoms or cycloalkyl of 3 to 6 carbon atoms, or wherein R^{19} and R^{20} constitute a saturated hydrocarbon bridge of 3 to 5 carbon atoms which together with the nitrogen atom between them form a heterocyclic ring, and wherein one carbon atom in said hydrocarbon bridge is optionally replaced by -O-, -NH-, or -NMe-,

(v) a group of the formula –OR^{21}, wherein R^{21} is a hydrogen atom, or a straight or branched alkyl or acyl group of 1 to 7 carbon atoms, wherein one or more hydrogen atoms of said alkyl or acyl group are optionally replaced with a group independently selected from the class consisting of -OH, -Oalkyl (wherein the alkyl moiety contains 1 to 6 carbon atoms), $-NH_2$, -NHMe and $-NMe_2$,

(vi) a group of the formula –$NR^{23}R^{24}$, wherein R^{23} and R^{24} are each, independently,

(a) a hydrogen atom,

(b) straight or branched alkyl or acyl of 1 to 7 carbon atoms or cycloalkyl of 3 to 7 carbon atoms, wherein said one or more hydrogen atoms of said alkyl or acyl group are optionally replaced with a group independently selected from the class consisting of

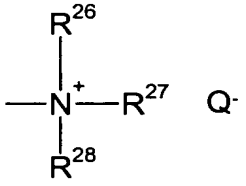
-OH, -Oalkyl (wherein the alkyl moiety is 1 to 6 carbon atoms), $-NH_2$, -NHMe and $-NMe_2$,

(c) a group of the formula $-(CH_2)_mCOOH$, wherein m is 0, 1 or 2,

(d) a group of the formula $-(CH_2)_nCOOR^{25}$, wherein n is 0, 1 or 2, and wherein R^{25} is straight or branched alkyl of 1 to 6 carbon atoms, or

(e) a group of the formula $-(CH_2)_nCONHR^{25}$, wherein n is 0, 1 or 2, and wherein R^{25} is straight or branched alkyl of 1 to 6 carbon atoms,

(vii) a quaternary group of the formula



wherein R^{26}, R^{27} and R^{28} are each, independently, a branched or unbranched alkyl group of 1 to 7 carbon atoms and Q^- is a pharmaceutically acceptable, or

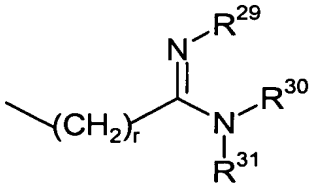
(viii) a cycloalkyl group of 3 to 7 carbon atoms,

(B) branched or unbranched carboxylic acid groups of 3 to 6 carbon atoms,

(C) branched or unbranched phosphonic acid groups of 2 to 6 carbon atoms,

(D) branched or unbranched sulfonic acid groups of 2 to 6 carbon atoms,

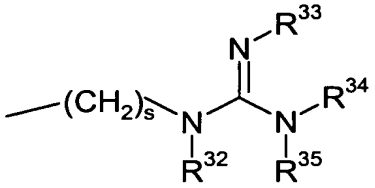
(E) amidino groups of the formula



wherein r is 2, 3, 4, 5 or 6, and R^{29}, R^{30} and R^{31} are each, independently, a hydrogen atom or alkyl of 1 to 3 carbon atoms, and wherein two of R^{29}, R^{30} and R^{31} may additionally constitute a saturated hydrocarbon bridge of 3 to 5

carbon atoms which together with the nitrogen atom(s) between them form a heterocyclic ring,

(F) guanidino groups of the formula



wherein s is 2, 3, 4, 5 or 6, and R^{32}, R^{33}, R^{34} and R^{35} are each, independently, a hydrogen atom or alkyl of 1 to 3 carbon atoms, and wherein two of R^{32}, R^{33}, R^{34} and R^{35} may additionally constitute a saturated hydrocarbon bridge of 3 to 5 carbon atoms which together with the nitrogen atom(s) between them form a heterocyclic ring,

(G) phenyl, wherein one or more hydrogen atoms of said phenyl group are optionally and independently replaced with:

(i) alkyl of 1 to 3 carbon atoms,

(ii) -COOH,

(iii) $-SO_2OH$,

(iv) $-PO(OH)_2$,

(v) a group of the formula $-COOR^{36}$, wherein R^{36} is straight or branched alkyl of 1 to 5 carbon atoms or cycloalkyl of 3 to 5 carbon atoms,

(vi) a group of the formula $-NR^{37}R^{38}$, wherein R^{37} and R^{38} are each, independently, a hydrogen atom, alkyl of 1 to 6 carbon atoms, cycloalkyl of 3 to 6 carbon atoms or acyl of 1 to 7 carbon atoms, or wherein R^{37} and R^{38} constitute a saturated hydrocarbon bridge of 3 to 5 carbon atoms which together with the nitrogen atom between them form a heterocyclic ring,

(vii) a group of the formula $-CONR^{39}R^{40}$, wherein R^{39} and R^{40} are each, independently, a hydrogen atom, alkyl of 1 to 6 carbon atoms or cycloalkyl of 3 to 6 carbon atoms, or wherein R^{39} and R^{40} constitute a

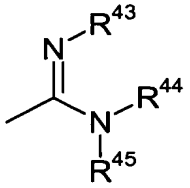
saturated hydrocarbon bridge of 3 to 5 carbon atoms which together with the nitrogen atom between them form a heterocyclic ring, and wherein one carbon atom in said hydrocarbon bridge is optionally replaced by -O-, -NH-, or –NMe-,

(viii) a group of the formula $-OR^{41}$, wherein R^{41} is a hydrogen atom, or an alkyl or acyl group of 1 to 7 carbon atoms,

(ix) a group of the formula $-SR^{42}$, wherein R^{42} is a hydrogen atom, or an alkyl or acyl group of 1 to 7 carbon atoms,

(x) -CN, or

(xi) an amidino group of the formula



wherein R^{43}, R^{44} and R^{45} are each, independently, a hydrogen atom or alkyl of 1 to 3 carbon atoms, and wherein two of R^{43}, R^{44} and R^{45} may additionally constitute a saturated hydrocarbon bridge of 3 to 5 carbon atoms which together with the nitrogen atom(s) between them form a heterocyclic ring,

(H) groups of the formula $-NR^{46}R^{47}$, wherein R^{46} and R^{47} are each independently a hydrogen atom, phenyl which is optionally monosubstituted with halogen, or R^{100c}, wherein R^{100c} is as hereinbefore defined,

(I) saturated or unsaturated heterocyclic groups selected from the class consisting of pyrrolinyl, pyrrolidinyl, piperidinyl, piperazinyl, morpholinyl and thiomorpholinyl, wherein said heterocyclic groups are optionally mono- or poly-substituted with moieties independently selected from the class consisting of:

(i) oxo,

(ii) $-OR^{101}$, wherein R^{101} is:

(a) a hydrogen atom,

(b) alkyl of 1 to 7 carbons, wherein any hydrogen atom of said alkyl group is optionally replaced with –OH, -OR^{110} (wherein R^{110} is an alkyl moiety of 1 to 6 carbon atoms), -NH_2, -NHMe or -NMe_2,

(c) acyl of 1 to 7 carbons, wherein any hydrogen atom of said acyl group is optionally replaced with -OH, -OR^{111} (wherein R^{111} is an alkyl moiety of 1 to 6 carbon atoms), -NH_2, -NHMe or -NMe_2,

(d) -$CONR^{102}R^{103}$, wherein R^{102} and R^{103} are each independently a hydrogen atom or alkyl of 1 to 7 atoms, or wherein R^{102} and R^{103} constitute a saturated hydrocarbon bridge of 3 to 5 carbon atoms which together with the nitrogen atom between them form a heterocyclic ring, and wherein one carbon atom in said hydrocarbon bridge is optionally replaced by –O-, -NH-, or -NMe-, or

(e) -$COOR^{104}$, wherein R^{104} is alkyl of 1 to 7 atoms,

(iii) -$CONR^{105}R^{106}$, wherein R^{105} and R^{106} are each independently:

(a) a hydrogen atom,

(b) straight or branched alkyl of 1 to 7 atoms or cycloalkyl of 3 to 7 atoms,

(c) benzoyl,

(d) benzyl or

(e) phenyl, wherein said phenyl ring is optionally mono- or polysubstituted with -OR^{112},wherein R^{112} is alkyl of 1 to 6 carbon atoms,

or, wherein R^{105} and R^{106} constitute a saturated hydrocarbon bridge of 3 to 5 carbon atoms which together with the nitrogen atom between them form a heterocyclic ring, and wherein one carbon atom in said hydrocarbon bridge is optionally replaced by –O-, -NH-, or –NMe-,

(iv) -$COOR^{107}$, wherein R^{107} is a hydrogen atom, or straight or branched alkyl of 1 to 7 carbon atoms ,

(v) straight or branched alkyl of 1 to 7 carbon atoms, alkenyl or alkynyl of 2 to 7 carbon atoms, or cycloalkyl of 3 to 7 carbons, wherein one or more hydrogen atoms of said alkyl, alkenyl, alkynyl or cycloalkyl group is optionally replaced with a moiety independently selected from the class consisting of:

(a) oxo,

(b) -OH,

(c) $-OR^{113}$, wherein R^{113} is alkyl of 1 to 6 carbon atoms,

(d) $-OCOCH_3$,

(e) $-NH_2$,

(f) -NHMe,

(g) $-NMe_2$,

(h) $-CO_2H$, and

(i) $-CO_2\ R^{114}$ wherein R^{114} is alkyl of 1 to 3 carbon atoms, or cycloalkyl of 3 to 7 carbons,

(vi) acyl of 1 to 7 carbon atoms, which may be straight, branched or cyclic, and wherein one or more hydrogen atoms of said acyl group is optionally replaced with a moiety independently selected from the class consisting of:

(a) -OH,

(b) $-OR^{115}$,wherein R^{115} is alkyl of 1 to 6 carbon atoms,

(c) $-NH_2$,

(d) -NHMe,

(e) $-NMe_2$,

(f) -NHCOMe,

(g) oxo,

(h) $-CO_2\ R^{116}$, wherein R^{116} is alkyl of 1 to 3 carbon atoms,

(i) -CN,

(j) the halogen atoms,

(k) heterocycles selected from the class consisting of pyrrolidinyl, piperidinyl, piperazinyl, morpholinyl and thiomorpholinyl, and

(l) aryl or heteroaryl selected from the class consisting of phenyl, thiophenyl, pyridyl, pyrimidinyl, furyl, pyrrolyl and oxazolyl,

(vii) $-SO_2R^{108}$, wherein R^{108} is:

(a) aryl or heteroaryl which is selected from the group consisting of phenyl, thiophenyl, pyridyl, pyrimidinyl, furyl, pyrrolyl, oxazolyl thiazolyl and pyrazolyl, wherein said aryl or heteroaryl moiety is optionally substituted with one or more moieties selected from the class consisting of the halogen atoms, straight or branched alkyl of 1 to 6 carbons, and $-OR^{117}$ (wherein R^{117} is hydrogen or alkyl of 1 to 6 carbon atoms),

(b) a heterocyclic group selected from the class consisting of pyrrolidinyl, piperidinyl, piperazinyl, morpholinyl and thiomorpholinyl, wherein said heterocyclic group is optionally substituted with one or more moieties selected from the class consisting of the halogen atoms, straight or branched alkyl of 1 to 6 carbons, and $-OR^{118}$ (wherein R^{118} is hydrogen or alkyl of 1 to 6 carbon atoms), or

(c) straight or branched alkyl of 1 to 7 atoms, wherein said alkyl moiety is optionally substituted with one or more moieties selected from the class consisting of the halogen atoms, straight or branched alkyl of 1 to 6 carbons, and $-OR^{119}$ (wherein R^{119} is hydrogen or alkyl of 1 to 6 carbon atoms),

(viii) $-COR^{109}$, wherein R^{109} is:

(a) aryl or heteroaryl which is selected from the class consisting of phenyl, thiophenyl, pyridyl, pyrimidinyl, furyl, pyrrolyl, oxazolyl, thiazolyl and pyrazolyl, wherein said aryl or heteroaryl moiety is optionally substituted with one or more moieties selected from the class consisting of the halogen atoms, straight or branched alkyl of

1 to 6 carbons, and -OR^{120} (wherein R^{120} is hydrogen or alkyl of 1 to 6 carbon atoms),

(b) a heterocyclic group selected from the class consisting of pyrrolidinyl, piperidinyl, piperazinyl, morpholinyl and thiomorpholinyl, wherein said heterocyclyl is optionally substituted with one or more halogen, straight or branched alkyl of 1 to 6 carbons, or -OR^{121} (wherein R^{121} is hydrogen or alkyl of 1 to 6 carbon atoms), or

(c) straight or branched alkyl of 1 to 7 atoms, wherein said alkyl moiety is optionally substituted with one or more moieties selected from the class consisting of the halogen atoms, straight or branched alkyl of 1 to 6 carbons, and -OR^{122} (wherein R^{122} is hydrogen or alkyl of 1 to 6 carbon atoms),

(ix) -CHO,

(x) the halogen atoms, and

(xi) aryl or heteroaryl which is selected from the class consisting of phenyl, thiophenyl, pyridyl, pyrimidinyl, furyl, pyrrolyl, oxazolyl, thiazolyl, pyrazolyl, isoxazolyl and imidazolyl,

(J) the halogen atoms, and

(K) -CN;

X is an oxygen atom;

R^3 is branched or unbranched alkyl of 1 to 3 carbon atoms;

R^4 is a group of the formula $-CH_2R^{55}$, wherein,

R^{55} is:

phenyl, which is optionally substituted at the 4-position with:

(A) R^{59c}, which is aryl or heteroaryl selected from the class consisting of phenyl, thiophenyl, pyridyl, pyrimidinyl and furyl, wherein one of the hydrogen atoms of said aryl or heteroaryl group is optionally replaced with:

(i) branched or unbranched alkyl of 1 to 6 carbon atoms or cycloalkyl of 3 to 6 carbon atoms, which alkyl or cycloakyl group is optionally mono- or polysubstituted with halogen or oxo,

(ii) -CN,

(iii) nitro, or

(iv) halogen,

(B) methyl,

(C) branched or unbranched alkyl of 2 to 6 carbon atoms or cycloalkyl of 3 to 6 carbon atoms, which alkyl or cycloakyl group is optionally monosubstituted with halogen or oxo,

(D) a group of the formula $-COOR^{67}$, wherein R^{67} is straight or branched alkyl of 1 to 5 carbon atoms or cycloalkyl of 3 to 5 carbon atoms,

(E) a group of the formula $-COR^{72}$, wherein R^{72} is a hydrogen atom, straight or branched alkyl of 1 to 5 carbon atoms, or cycloalkyl of 3 to 5 carbon atoms,

(F) a group of the formula $-OR^{73}$, wherein R^{73} is a hydrogen atom, an alkyl, or fluoroalkyl or acyl group of 1 to 7 carbon atoms,

(G) -CN,

(H) nitro, or

(I) halogen;

R^5 is Cl;

Z is =C(H)-; and,

R^7 is Cl;

or a pharmaceutically acceptable salt thereof.

5. A compound of the formula I, as set forth in claim 1, wherein:

A^1 is =N-;

A^2 is =C(H)-;

D is =C(H)-, =C(SO_2R^1)- or =C(C(O)R^1)-, wherein R^1 is selected from the class consisting of:

(A) –R^{100d}, which is:

branched or unbranched alkyl of 1 to 6 carbon atoms, alkenyl of 2 to 6 carbon atoms or cycloalkyl or cycloalkenyl of 3 to 6 carbon atoms, in which alkyl, alkenyl, cycloalkyl or cycloalkenyl group one or more hydrogen atoms are optionally and independently replaced with:

(i) oxo,

(ii) a group of the formula –$COOR^{18}$, wherein R^{18} is straight or branched alkyl of 1 to 7 carbon atoms or cycloalkyl of 3 to 6 carbon atoms,

(iii) a group of the formula –$CONR^{19}R^{20}$, wherein R^{19} and R^{20} are each, independently, a hydrogen atom, alkyl of 1 to 6 carbon atoms or cycloalkyl of 3 to 6 carbon atoms, or wherein R^{19} and R^{20} constitute a saturated hydrocarbon bridge of 3 to 5 carbon atoms which together with the nitrogen atom between them form a heterocyclic ring, and wherein one carbon atom in said hydrocarbon bridge is optionally replaced by -O-, -NH-, or -NMe-,

(iv) a group of the formula –OR^{21}, wherein R^{21} is a hydrogen atom, or a straight or branched alkyl or acyl group of 1 to 7 carbon atoms, wherein one or more hydrogen atoms of said alkyl or acyl group are optionally replaced with a group independently selected from the class consisting of -OH, -Oalkyl (wherein the alkyl moiety contains 1 to 6 carbon atoms), -NH_2, -NHMe and -NMe_2,

(v) a group of the formula –$NR^{23}R^{24}$, wherein R^{23} and R^{24} are each, independently,

(a) a hydrogen atom,

(b) straight or branched alkyl or acyl of 1 to 7 carbon atoms or cycloalkyl of 3 to 7 carbon atoms, wherein said one or more hydrogen atoms of said alkyl or acyl group are optionally replaced with a group independently selected from the class consisting of

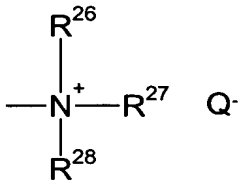
-OH, -Oalkyl (wherein the alkyl moiety is 1 to 6 carbon atoms), $-NH_2$, -NHMe and $-NMe_2$,

(c) a group of the formula $-(CH_2)_mCOOH$, wherein m is 0, 1 or 2,

(d) a group of the formula $-(CH_2)_nCOOR^{25}$, wherein n is 0, 1 or 2, and wherein R^{25} is straight or branched alkyl of 1 to 6 carbon atoms, or

(e) a group of the formula $-(CH_2)_nCONHR^{25}$, wherein n is 0, 1 or 2, and wherein R^{25} is straight or branched alkyl of 1 to 6 carbon atoms,

(vi) a quaternary group of the formula



wherein R^{26}, R^{27} and R^{28} are each, independently, a branched or unbranched alkyl group of 1 to 7 carbon atoms and Q^- is a pharmaceutically acceptable counter ion, or

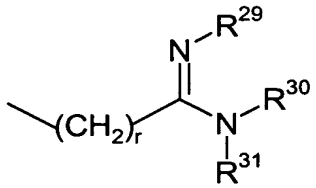
(vii) a cycloalkyl group of 3 to 7 carbon atoms,

(B) branched or unbranched carboxylic acid groups of 3 to 6 carbon atoms,

(C) branched or unbranched phosphonic acid groups of 2 to 6 carbon atoms,

(D) branched or unbranched sulfonic acid groups of 2 to 6 carbon atoms,

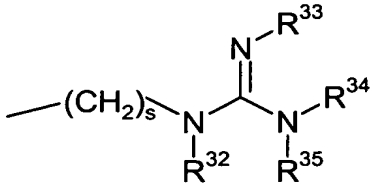
(E) amidino groups of the formula



wherein r is 2, 3, 4, 5 or 6, and R^{29}, R^{30} and R^{31} are each, independently, a hydrogen atom or alkyl of 1 to 3 carbon atoms, and wherein two of R^{29}, R^{30} and R^{31} may additionally constitute a saturated hydrocarbon bridge of 3 to 5

carbon atoms which together with the nitrogen atom(s) between them form a heterocyclic ring,

(F) guanidino groups of the formula



wherein s is 2, 3, 4, 5 or 6, and R^{32}, R^{33}, R^{34} and R^{35} are each, independently, a hydrogen atom or alkyl of 1 to 3 carbon atoms, and wherein two of R^{32}, R^{33}, R^{34} and R^{35} may additionally constitute a saturated hydrocarbon bridge of 3 to 5 carbon atoms which together with the nitrogen atom(s) between them form a heterocyclic ring,

(G) groups of the formula $-NR^{46}R^{47}$, wherein R^{46} and R^{47} are each independently a hydrogen atom, phenyl which is optionally monosubstituted with halogen, or R^{100d}, wherein R^{100d} is as hereinbefore defined,

(H) saturated or unsaturated heterocyclic groups selected from the class consisting of pyrrolinyl, pyrrolidinyl, piperidinyl, piperazinyl, morpholinyl and thiomorpholinyl, wherein said heterocyclic groups are optionally mono- or poly-substituted with moieties independently selected from the class consisting of:

(i) oxo,

(ii) $-OR^{101}$, wherein R^{101} is:

(a) a hydrogen atom,

(b) alkyl of 1 to 7 carbons, wherein any hydrogen atom of said alkyl group is optionally replaced with –OH, $-OR^{110}$ (wherein R^{110} is an alkyl moiety of 1 to 6 carbon atoms), $-NH_2$, -NHMe or $-NMe_2$,

(c) acyl of 1 to 7 carbons, wherein any hydrogen atom of said acyl group is optionally replaced with -OH, $-OR^{111}$ (wherein R^{111} is an alkyl moiety of 1 to 6 carbon atoms), $-NH_2$, -NHMe or $-NMe_2$,

(d) -CONR^{102}R^{103}, wherein R^{102} and R^{103} are each independently a hydrogen atom or alkyl of 1 to 7 atoms, or wherein R^{102} and R^{103} constitute a saturated hydrocarbon bridge of 3 to 5 carbon atoms which together with the nitrogen atom between them form a heterocyclic ring, and wherein one carbon atom in said hydrocarbon bridge is optionally replaced by –O-, -NH-, or -NMe-, or

(e) -COOR^{104}, wherein R^{104} is alkyl of 1 to 7 atoms,

(iii) -CONR^{105}R^{106}, wherein R^{105} and R^{106} are each independently:

(a) a hydrogen atom,

(b) straight or branched alkyl of 1 to 7 atoms or cycloalkyl of 3 to 7 atoms,

(c) benzoyl,

(d) benzyl or

(e) phenyl, wherein said phenyl ring is optionally mono- or polysubstituted with -OR^{112},wherein R^{112} is alkyl of 1 to 6 carbon atoms,

or, wherein R^{105} and R^{106} constitute a saturated hydrocarbon bridge of 3 to 5 carbon atoms which together with the nitrogen atom between them form a heterocyclic ring, and wherein one carbon atom in said hydrocarbon bridge is optionally replaced by -O-, -NH-, or -NMe-,

(iv) -COOR^{107}, wherein R^{107} is a hydrogen atom, or straight or branched alkyl of 1 to 7 carbon atoms ,

(v) straight or branched alkyl of 1 to 7 carbon atoms, alkenyl or alkynyl of 2 to 7 carbon atoms, or cycloalkyl of 3 to 7 carbons, wherein one or more hydrogen atoms of said alkyl, alkenyl, alkynyl or cycloalkyl group is optionally replaced with a moiety independently selected from the class consisting of:

(a) oxo,

(b) -OH,

(c) -OR^{113}, wherein R^{113} is alkyl of 1 to 6 carbon atoms,

(d) -$OCOCH_3$,

(e) -NH_2,

(f) -NHMe,

(g) -NMe_2,

(h) -CO_2H, and

(i) -CO_2 R^{114} wherein R^{114} is alkyl of 1 to 3 carbon atoms, or cycloalkyl of 3 to 7 carbons,

(vi) acyl of 1 to 7 carbon atoms, which may be straight, branched or cyclic, and wherein one or more hydrogen atoms of said acyl group is optionally replaced with a moiety independently selected from the class consisting of:

(a) -OH,

(b) -OR^{115},wherein R^{115} is alkyl of 1 to 6 carbon atoms,

(c) -NH_2,

(d) -NHMe,

(e) -NMe_2,

(f) -NHCOMe,

(g) oxo,

(h) -CO_2 R^{116}, wherein R^{116} is alkyl of 1 to 3 carbon atoms,

(i) -CN,

(j) the halogen atoms,

(k) heterocycles selected from the class consisting of pyrrolidinyl, piperidinyl, piperazinyl, morpholinyl and thiomorpholinyl, and

(l) aryl or heteroaryl selected from the class consisting of phenyl, thiophenyl, pyridyl, pyrimidinyl, furyl, pyrrolyl and oxazolyl,

(vii) -SO_2R^{108}, wherein R^{108} is:

(a) aryl or heteroaryl which is selected from the group consisting of phenyl, thiophenyl, pyridyl, pyrimidinyl, furyl, pyrrolyl, oxazolyl thiazolyl and pyrazolyl, wherein said aryl or heteroaryl moiety is

optionally substituted with one or more moieties selected from the class consisting of the halogen atoms, straight or branched alkyl of 1 to 6 carbons, and -OR^{117} (wherein R^{117} is hydrogen or alkyl of 1 to 6 carbon atoms),

(b) a heterocyclic group selected from the class consisting of pyrrolidinyl, piperidinyl, piperazinyl, morpholinyl and thiomorpholinyl, wherein said heterocyclic group is optionally substituted with one or more moieties selected from the class consisting of the halogen atoms, straight or branched alkyl of 1 to 6 carbons, and -OR^{118} (wherein R^{118} is hydrogen or alkyl of 1 to 6 carbon atoms), or

(c) straight or branched alkyl of 1 to 7 atoms, wherein said alkyl moiety is optionally substituted with one or more moieties selected from the class consisting of the halogen atoms, straight or branched alkyl of 1 to 6 carbons, and –OR^{119} (wherein R^{119} is hydrogen or alkyl of 1 to 6 carbon atoms),

(viii) -COR^{109}, wherein R^{109} is:

(a) aryl or heteroaryl which is selected from the class consisting of phenyl, thiophenyl, pyridyl, pyrimidinyl, furyl, pyrrolyl, oxazolyl, thiazolyl and pyrazolyl, wherein said aryl or heteroaryl moiety is optionally substituted with one or more moieties selected from the class consisting of the halogen atoms, straight or branched alkyl of 1 to 6 carbons, and -OR^{120} (wherein R^{120} is hydrogen or alkyl of 1 to 6 carbon atoms),

(b) a heterocyclic group selected from the class consisting of pyrrolidinyl, piperidinyl, piperazinyl, morpholinyl and thiomorpholinyl, wherein said heterocyclyl is optionally substituted with one or more halogen, straight or branched alkyl of 1 to 6 carbons, or -OR^{121} (wherein R^{121} is hydrogen or alkyl of 1 to 6 carbon atoms), or

(c) straight or branched alkyl of 1 to 7 atoms, wherein said alkyl moiety is optionally substituted with one or more moieties selected from the class consisting of the halogen atoms, straight or branched alkyl of 1 to 6 carbons, and -OR^{122} (wherein R^{122} is hydrogen or alkyl of 1 to 6 carbon atoms),

(ix) -CHO,

(x) the halogen atoms, and

(xi) aryl or heteroaryl which is selected from the class consisting of phenyl, thiophenyl, pyridyl, pyrimidinyl, furyl, pyrrolyl, oxazolyl, thiazolyl, pyrazolyl, isoxazolyl and imidazolyl, and

(I) the halogen atoms,

X is an oxygen atom;

R^3 is branched or unbranched alkyl of 1 to 3 carbon atoms;

R^4 is a group of the formula $-CH_2R^{55}$, wherein,

R^{55} is:

phenyl, which is optionally substituted at the 4-position with:

(A) R^{59d}, which is aryl or heteroaryl selected from the class consisting of phenyl, thiophenyl, pyridyl, pyrimidinyl and furyl, wherein one of the hydrogen atoms of said aryl or heteroaryl group is optionally replaced with:

(i) branched or unbranched alkyl of 1 to 6 carbon atoms or cycloalkyl of 3 to 6 carbon atoms, which alkyl or cycloakyl group is optionally mono- or polysubstituted with halogen or oxo,

(ii) -CN,

(iii) nitro, or

(iv) halogen,

(B) methyl,

(C) branched or unbranched alkyl of 2 to 6 carbon atoms or cycloalkyl of 3 to 6 carbon atoms, which alkyl or cycloakyl group is optionally monosubstituted with halogen or oxo,

(D) a group of the formula $-COOR^{67}$, wherein R^{67} is straight or branched alkyl of 1 to 5 carbon atoms or cycloalkyl of 3 to 5 carbon atoms,

(E) a group of the formula $-COR^{72}$, wherein R^{72} is a hydrogen atom, straight or branched alkyl of 1 to 5 carbon atoms, or cycloalkyl of 3 to 5 carbon atoms,

(F) a group of the formula $-OR^{73}$, wherein R^{73} is a hydrogen atom, an alkyl, or fluoroalkyl or acyl group of 1 to 7 carbon atoms,

(G) -CN,

(H) nitro, or

(I) halogen;

R^5 is Cl;

Z is =C(H)-; and,

R^7 is Cl;

or a pharmaceutically acceptable salt thereof.

6. A compound of the formula I, as set forth in claim 1, wherein:

A^1 is =N-;

A^2 is =C(H)-;

D is $=C(SO_2R^1)-$ or $=C(C(O)R^1)-$, wherein R^1 is selected from the class consisting of:

(A) $-R^{100e}$, which is:

branched or unbranched alkyl of 1 to 6 carbon atoms, alkenyl of 2 to 6 carbon atoms or cycloalkyl or cycloalkenyl of 3 to 6 carbon atoms, in which alkyl, alkenyl, cycloalkyl or cycloalkenyl group one or more hydrogen atoms are optionally and independently replaced with:

(i) oxo,

(ii) a group of the formula $-COOR^{18}$, wherein R^{18} is straight or branched alkyl of 1 to 7 carbon atoms or cycloalkyl of 3 to 6 carbon atoms,

(iii) a group of the formula $-CONR^{19}R^{20}$, wherein R^{19} and R^{20} are each, independently, a hydrogen atom, alkyl of 1 to 6 carbon atoms or cycloalkyl of 3 to 6 carbon atoms, or wherein R^{19} and R^{20} constitute a saturated hydrocarbon bridge of 3 to 5 carbon atoms which together with the nitrogen atom between them form a heterocyclic ring, and wherein one carbon atom in said hydrocarbon bridge is optionally replaced by -O-, -NH-, or -NMe-,

(iv) a group of the formula $-OR^{21}$, wherein R^{21} is a hydrogen atom, or a straight or branched alkyl or acyl group of 1 to 7 carbon atoms, wherein one or more hydrogen atoms of said alkyl or acyl group are optionally replaced with a group independently selected from the class consisting of -OH, -Oalkyl (wherein the alkyl moiety contains 1 to 6 carbon atoms), $-NH_2$, -NHMe and $-NMe_2$, or

(v) a group of the formula $-NR^{23}R^{24}$, wherein R^{23} and R^{24} are each, independently,

(a) a hydrogen atom,

(b) straight or branched alkyl or acyl of 1 to 7 carbon atoms or cycloalkyl of 3 to 7 carbon atoms, wherein said one or more hydrogen atoms of said alkyl or acyl group are optionally replaced with a group independently selected from the class consisting of -OH, -Oalkyl (wherein the alkyl moiety is 1 to 6 carbon atoms), $-NH_2$, -NHMe and $-NMe_2$,

(c) a group of the formula $-(CH_2)_mCOOH$, wherein m is 0, 1 or 2,

(d) a group of the formula $-(CH_2)_nCOOR^{25}$, wherein n is 0, 1 or 2, and wherein R^{25} is straight or branched alkyl of 1 to 6 carbon atoms, or

(e) a group of the formula $-(CH_2)_nCONHR^{25}$, wherein n is 0, 1 or 2, and wherein R^{25} is straight or branched alkyl of 1 to 6 carbon atoms,

(B) groups of the formula $-NR^{46}R^{47}$, wherein R^{46} and R^{47} are each independently a hydrogen atom, phenyl which is optionally monosubstituted with halogen, or R^{100e}, wherein R^{100e} is as hereinbefore defined, and

(C) saturated or unsaturated heterocyclic groups selected from the class consisting of pyrrolinyl, pyrrolidinyl, piperidinyl, piperazinyl, morpholinyl and thiomorpholinyl, wherein said heterocyclic groups are optionally mono- or poly-substituted with moieties independently selected from the class consisting of:

(i) oxo,

(ii) $-OR^{101}$, wherein R^{101} is:

(a) a hydrogen atom,

(b) alkyl of 1 to 7 carbons, wherein any hydrogen atom of said alkyl group is optionally replaced with –OH, $-OR^{110}$ (wherein R^{110} is an alkyl moiety of 1 to 6 carbon atoms), $-NH_2$, -NHMe or $-NMe_2$,

(c) acyl of 1 to 7 carbons, wherein any hydrogen atom of said acyl group is optionally replaced with -OH, $-OR^{111}$ (wherein R^{111} is an alkyl moiety of 1 to 6 carbon atoms), $-NH_2$, -NHMe or $-NMe_2$,

(d) -$CONR^{102}R^{103}$, wherein R^{102} and R^{103} are each independently a hydrogen atom or alkyl of 1 to 7 atoms, or wherein R^{102} and R^{103} constitute a saturated hydrocarbon bridge of 3 to 5 carbon atoms which together with the nitrogen atom between them form a heterocyclic ring, and wherein one carbon atom in said hydrocarbon bridge is optionally replaced by –O-, -NH-, or -NMe-, or

(e) -$COOR^{104}$, wherein R^{104} is alkyl of 1 to 7 atoms,

(iii) -$CONR^{105}R^{106}$, wherein R^{105} and R^{106} are each independently:

(a) a hydrogen atom, or

(b) straight or branched alkyl of 1 to 7 atoms or cycloalkyl of 3 to 7 atoms,

or, wherein R^{105} and R^{106} constitute a saturated hydrocarbon bridge of 3 to 5 carbon atoms which together with the nitrogen atom between them form a heterocyclic ring, and wherein one carbon atom in said hydrocarbon bridge is optionally replaced by –O-, -NH-, or –NMe-,

(iv) -$COOR^{107}$, wherein R^{107} is a hydrogen atom, or straight or branched alkyl of 1 to 7 carbon atoms ,

(v) straight or branched alkyl of 1 to 7 carbon atoms, alkenyl or alkynyl of 2 to 7 carbon atoms, or cycloalkyl of 3 to 7 carbons, wherein one or more hydrogen atoms of said alkyl, alkenyl, alkynyl or cycloalkyl group is optionally replaced with a moiety independently selected from the class consisting of:

(a) oxo,

(b) -OH,

(c) -OR^{113}, wherein R^{113} is alkyl of 1 to 6 carbon atoms,

(d) -$OCOCH_3$,

(e) -NH_2,

(f) -NHMe,

(g) $-NMe_2$,

(h) $-CO_2H$, and

(i) $-CO_2 R^{114}$ wherein R^{114} is alkyl of 1 to 3 carbon atoms, or cycloalkyl of 3 to 7 carbons,

(vi) acyl of 1 to 7 carbon atoms, which may be straight, branched or cyclic, and wherein one or more hydrogen atoms of said acyl group is optionally replaced with a moiety independently selected from the class consisting of:

(a) -OH,

(b) $-OR^{115}$,wherein R^{115} is alkyl of 1 to 6 carbon atoms,

(c) $-NH_2$,

(d) -NHMe,

(e) $-NMe_2$,

(f) -NHCOMe,

(g) oxo,

(h) $-CO_2 R^{116}$, wherein R^{116} is alkyl of 1 to 3 carbon atoms,

(i) -CN,

(j) the halogen atoms,

(k) heterocycles selected from the class consisting of pyrrolidinyl, piperidinyl, piperazinyl, morpholinyl and thiomorpholinyl, and

(l) aryl or heteroaryl selected from the class consisting of phenyl, thiophenyl, pyridyl, pyrimidinyl, furyl, pyrrolyl and oxazolyl,

(vii) $-SO_2R^{108}$, wherein R^{108} is:

(a) phenyl, wherein said phenyl moiety is optionally substituted with one or more moieties selected from the class consisting of the halogen atoms, straight or branched alkyl of 1 to 6 carbons, and $-OR^{117}$ (wherein R^{117} is hydrogen or alkyl of 1 to 6 carbon atoms),

(b) a heterocyclic group selected from the class consisting of pyrrolidinyl, piperidinyl, piperazinyl, morpholinyl and

thiomorpholinyl, wherein said heterocyclic group is optionally substituted with one or more moieties selected from the class consisting of the halogen atoms, straight or branched alkyl of 1 to 6 carbons, and -OR^{118} (wherein R^{118} is hydrogen or alkyl of 1 to 6 carbon atoms), or

(c) straight or branched alkyl of 1 to 7 atoms, wherein said alkyl moiety is optionally substituted with one or more moieties selected from the class consisting of the halogen atoms, straight or branched alkyl of 1 to 6 carbons, and –OR^{119} (wherein R^{119} is hydrogen or alkyl of 1 to 6 carbon atoms),

(viii) -COR^{109}, wherein R^{109} is:

(a) phenyl, wherein said phenyl moiety is optionally substituted with one or more moieties selected from the class consisting of the halogen atoms, straight or branched alkyl of 1 to 6 carbons, and -OR^{120} (wherein R^{120} is hydrogen or alkyl of 1 to 6 carbon atoms),

(b) a heterocyclic group selected from the class consisting of pyrrolidinyl, piperidinyl, piperazinyl, morpholinyl and thiomorpholinyl, wherein said heterocyclyl is optionally substituted with one or more halogen, straight or branched alkyl of 1 to 6 carbons, or -OR^{121} (wherein R^{121} is hydrogen or alkyl of 1 to 6 carbon atoms), or

(c) straight or branched alkyl of 1 to 7 atoms, wherein said alkyl moiety is optionally substituted with one or more moieties selected from the class consisting of the halogen atoms, straight or branched alkyl of 1 to 6 carbons, and -OR^{122} (wherein R^{122} is hydrogen or alkyl of 1 to 6 carbon atoms), and

(ix) -CHO;

X is an oxygen atom;

R^3 is branched or unbranched alkyl of 1 to 3 carbon atoms;

R^4 is a group of the formula $-CH_2R^{55}$, wherein,

R^{55} is:

phenyl, which is optionally substituted at the 4-position with:

(A) R^{59e}, which is aryl or heteroaryl selected from the class consisting of phenyl, thiophenyl, pyridyl, pyrimidinyl and furyl, wherein one of the hydrogen atoms of said aryl or heteroaryl group is optionally replaced with:

(i) methyl,

(ii) -CN,

(iii) nitro, or

(iv) halogen,

(B) methyl,

(C) -CN,

(D) nitro, or

(E) halogen;

R^5 is Cl;

Z is =C(H)-; and,

R^7 is Cl;

or a pharmaceutically acceptable salt thereof.

7. A compound of the formula I, as set forth in claim 1, wherein:

A^1 is =N-;

A^2 is =C(H)-;

D is $=C(SO_2R^1)-$ or $=C(C(O)R^1)-$, wherein R^1 is selected from the class consisting of:

(A) $-R^{100e}$, which is:

branched or unbranched alkyl of 1 to 6 carbon atoms or cycloalkyl of 3 to 6 carbon atoms, in which alkyl, or cycloalkyl group one to three hydrogen atoms are optionally and independently replaced with:

(i) oxo,

(ii) a group of the formula $-COOR^{18}$, wherein R^{18} is straight or branched alkyl of 1 to 7 carbon atoms or cycloalkyl of 3 to 6 carbon atoms,

(iii) a group of the formula $-CONR^{19}R^{20}$, wherein R^{19} and R^{20} are each, independently, a hydrogen atom, alkyl of 1 to 6 carbon atoms or cycloalkyl of 3 to 6 carbon atoms, or wherein R^{19} and R^{20} constitute a saturated hydrocarbon bridge of 3 to 5 carbon atoms which together with the nitrogen atom between them form a heterocyclic ring, and wherein one carbon atom in said hydrocarbon bridge is optionally replaced by -O-, -NH-, or -NMe-,

(iv) a group of the formula $-OR^{21}$, wherein R^{21} is a hydrogen atom, or a straight or branched alkyl or acyl group of 1 to 7 carbon atoms, or

(v) a group of the formula $-NR^{23}R^{24}$, wherein R^{23} and R^{24} are each, independently,

(a) a hydrogen atom,

(b) straight or branched alkyl or acyl of 1 to 7 carbon atoms or cycloalkyl of 3 to 7 carbon atoms,

(c) a group of the formula $-(CH_2)_mCOOH$, wherein m is 0, 1 or 2,

(d) a group of the formula $-(CH_2)_nCOOR^{25}$, wherein n is 0, 1 or 2, and wherein R^{25} is straight or branched alkyl of 1 to 6 carbon atoms, or

(e) a group of the formula $-(CH_2)_nCONHR^{25}$, wherein n is 0, 1 or 2, and wherein R^{25} is straight or branched alkyl of 1 to 6 carbon atoms, and

(B) saturated heterocyclic groups selected from the class consisting of pyrrolidinyl, piperidinyl, piperazinyl, morpholinyl and thiomorpholinyl, wherein said heterocyclic groups are optionally mono- or di-substituted with moieties independently selected from the class consisting of:

(i) oxo,

(ii) $-OR^{101}$, wherein R^{101} is:

(a) a hydrogen atom,

(b) alkyl of 1 to 7 carbons, wherein one hydrogen atom of said alkyl group is optionally replaced with –OH, -OR^{110} (wherein R^{110} is an alkyl moiety of 1 to 6 carbon atoms), -NH_2, -NHMe or -NMe_2,

(c) acyl of 1 to 7 carbons, wherein one hydrogen atom of said acyl group is optionally replaced with -OH, -OR^{111} (wherein R^{111} is an alkyl moiety of 1 to 6 carbon atoms), -NH_2, -NHMe or -NMe_2,

(d) -$CONR^{102}R^{103}$, wherein R^{102} and R^{103} are each independently a hydrogen atom or alkyl of 1 to 7 atoms, or wherein R^{102} and R^{103} constitute a saturated hydrocarbon bridge of 3 to 5 carbon atoms which together with the nitrogen atom between them form a heterocyclic ring, and wherein one carbon atom in said hydrocarbon bridge is optionally replaced by –O-, -NH-, or -NMe-, or

(e) -$COOR^{104}$, wherein R^{104} is alkyl of 1 to 7 atoms,

(iii) -$CONR^{105}R^{106}$, wherein R^{105} and R^{106} are each independently:

(a) a hydrogen atom, or

(b) straight or branched alkyl of 1 to 7 atoms or cycloalkyl of 3 to 7 atoms, wherein said alkyl or cycloalkyl group is optionally monosubstituted with -OH, -OR^{123} (wherein R^{123} is an alkyl moiety of 1 to 6 carbon atoms), -NH_2, -NHMe, -NMe_2, pyrrolidinyl, piperidinyl, piperazinyl or morpholinyl, or, wherein R^{105} and R^{106} constitute a saturated hydrocarbon bridge of 3 to 5 carbon atoms which together with the nitrogen atom between them form a heterocyclic ring, and wherein one carbon atom in said hydrocarbon bridge is optionally replaced by -O-, -NH-, or -NMe-,

(iv) -$COOR^{107}$, wherein R^{107} is a hydrogen atom, or straight or branched alkyl of 1 to 7 carbon atoms ,

(v) straight or branched alkyl of 1 to 7 carbon atoms or cycloalkyl of 3 to 7 carbons, wherein one to three hydrogen atoms of said alkyl or cycloalkyl group is optionally replaced with a moiety independently selected from the class consisting of:

(a) oxo,

(b) -OH,

(c) $-OR^{113}$, wherein R^{113} is alkyl of 1 to 6 carbon atoms,

(d) $-OCOCH_3$,

(e) $-NH_2$,

(f) -NHMe,

(g) $-NMe_2$,

(h) $-CO_2H$, and

(i) $-CO_2\ R^{114}$ wherein R^{114} is alkyl of 1 to 3 carbon atoms, or cycloalkyl of 3 to 7 carbons,

(vi) acyl of 1 to 7 carbon atoms, which may be straight, branched or cyclic, and wherein one or two hydrogen atoms of said acyl group is optionally replaced with a moiety selected from the class consisting of:

(a) -OH,

(b) $-OR^{115}$,wherein R^{115} is alkyl of 1 to 6 carbon atoms,

(c) $-NH_2$,

(d) -NHMe,

(e) $-NMe_2$,

(f) -NHCOMe,

(g) oxo,

(h) $-CO_2\ R^{116}$, wherein R^{116} is alkyl of 1 to 3 carbon atoms,

(i) -CN,

(j) the halogen atoms,

(k) heterocycles selected from the class consisting of pyrrolidinyl, piperidinyl, piperazinyl, morpholinyl and thiomorpholinyl, and

(l) aryl or heteroaryl selected from the class consisting of phenyl, thiophenyl, pyridyl, pyrimidinyl, furyl, pyrrolyl and oxazolyl,

(vii) $-SO_2R^{108}$, wherein R^{108} is:

(a) phenyl, wherein said phenyl moiety is optionally substituted with one moiety selected from the class consisting of the halogen atoms, straight or branched alkyl of 1 to 6 carbons, and $-OR^{117}$ (wherein R^{117} is hydrogen or alkyl of 1 to 6 carbon atoms),

(b) a heterocyclic group selected from the class consisting of pyrrolidinyl, piperidinyl, piperazinyl, morpholinyl and thiomorpholinyl, wherein said heterocyclic group is optionally substituted with one moiety selected from the class consisting of the halogen atoms, straight or branched alkyl of 1 to 6 carbons, and $-OR^{118}$ (wherein R^{118} is hydrogen or alkyl of 1 to 6 carbon atoms), or

(c) straight or branched alkyl of 1 to 7 atoms, wherein said alkyl moiety is optionally substituted with one moiety selected from the class consisting of the halogen atoms, straight or branched alkyl of 1 to 6 carbons, and $-OR^{119}$ (wherein R^{119} is hydrogen or alkyl of 1 to 6 carbon atoms),

(viii) $-COR^{109}$, wherein R^{109} is:

(a) phenyl, wherein said phenyl moiety is optionally substituted with one moiety selected from the class consisting of the halogen atoms, straight or branched alkyl of 1 to 6 carbons, and $-OR^{120}$ (wherein R^{120} is hydrogen or alkyl of 1 to 6 carbon atoms),

(b) a heterocyclic group selected from the class consisting of pyrrolidinyl, piperidinyl, piperazinyl, morpholinyl and thiomorpholinyl, wherein said heterocyclyl is optionally substituted with one halogen, straight or branched alkyl of 1 to 6 carbons, or $-OR^{121}$ (wherein R^{121} is hydrogen or alkyl of 1 to 6 carbon atoms), or

(c) straight or branched alkyl of 1 to 7 atoms, wherein said alkyl moiety is optionally substituted with one moeity selected from the class consisting of the halogen atoms, straight or branched alkyl of 1 to 6 carbons, and -OR^{122} (wherein R^{122} is hydrogen or alkyl of 1 to 6 carbon atoms), and

(ix) -CHO;

X is an oxygen atom;

R^3 is branched or unbranched alkyl of 1 to 3 carbon atoms;

R^4 is a group of the formula $-CH_2R^{55}$, wherein,

R^{55} is:

phenyl, which is optionally substituted at the 4-position with:

(A) R^{59e}, which is aryl or heteroaryl selected from the class consisting of phenyl, thiophenyl, pyridyl, pyrimidinyl and furyl, wherein one of the hydrogen atoms of said aryl or heteroaryl group is optionally replaced with:

(i) methyl,

(ii) -CN,

(iii) nitro, or

(iv) halogen,

(B) methyl,

(C) -CN,

(D) nitro, or

(E) halogen;

R^5 is Cl;

Z is =C(H)-; and,

R^7 is Cl;

or a pharmaceutically acceptable salt thereof.

8. A compound of the formula I, as set forth in claim 1, wherein:

A^1 is =N-;

A^2 is =C(H)-;

D is $=C(SO_2R^1)-$, wherein R^1 is selected from the class consisting of:

(A) methyl, and

(B) saturated heterocyclic groups selected from the class consisting of pyrrolidinyl, piperidinyl, piperazinyl and morpholinyl wherein said heterocyclic groups are optionally mono- or di-substituted with moieties independently selected from the class consisting of:

(i) oxo,

(ii) $-OR^{101}$, wherein R^{101} is:

(a) a hydrogen atom,

(b) alkyl of 1 to 7 carbons, wherein one hydrogen atom of said alkyl group is optionally replaced with –OH, $-OR^{110}$ (wherein R^{110} is an alkyl moiety of 1 to 6 carbon atoms), $-NH_2$, -NHMe or $-NMe_2$, or

(c) acyl of 1 to 7 carbons, wherein one hydrogen atom of said acyl group is optionally replaced with -OH, $-OR^{111}$ (wherein R^{111} is an alkyl moiety of 1 to 6 carbon atoms), $-NH_2$, -NHMe or $-NMe_2$,

(iii) $-CONR^{105}R^{106}$, wherein R^{105} and R^{106} are each independently:

(a) a hydrogen atom, or

(b) straight or branched alkyl of 1 to 7 atoms or cycloalkyl of 3 to 7 atoms, wherein said alkyl or cycloalkyl group is optionally monosubstituted with -OH, $-OR^{123}$ (wherein R^{123} is an alkyl moiety of 1 to 6 carbon atoms), $-NH_2$, -NHMe, $-NMe_2$, pyrrolidinyl, piperidinyl, piperazinyl or morpholinyl,

or, wherein R^{105} and R^{106} constitute a saturated hydrocarbon bridge of 3 to 5 carbon atoms which together with the nitrogen atom between them form a heterocyclic ring, and wherein one

carbon atom in said hydrocarbon bridge is optionally replaced by -O-, -NH-, or -NMe-,

(iv) $-COOR^{107}$, wherein R^{107} is a hydrogen atom, or straight or branched alkyl of 1 to 7 carbon atoms ,

(v) straight or branched alkyl of 1 to 7 carbon atoms wherein one or two hydrogen atoms of said alkyl group are optionally replaced with moieties independently selected from the class consisting of:

(a) oxo,

(b) -OH,

(c) $-OR^{113}$, wherein R^{113} is alkyl of 1 to 6 carbon atoms,

(d) $-OCOCH_3$,

(e) $-NH_2$,

(f) -NHMe,

(g) $-NMe_2$,

(h) $-CO_2H$, and

(i) $-CO_2\ R^{114}$ wherein R^{114} is alkyl of 1 to 3 carbon atoms, or cycloalkyl of 3 to 7 carbons,

(vi) acyl of 1 to 7 carbon atoms, which may be straight, branched or cyclic, and wherein one or two hydrogen atoms of said acyl group is optionally replaced with a moiety selected from the class consisting of:

(a) -OH,

(b) $-OR^{115}$,wherein R^{115} is alkyl of 1 to 6 carbon atoms,

(c) $-NH_2$,

(d) -NHMe,

(e) $-NMe_2$,

(f) -NHCOMe,

(g) oxo,

(h) $-CO_2\ R^{116}$, wherein R^{116} is alkyl of 1 to 3 carbon atoms,

(i) -CN,

(j) the halogen atoms,

(k) heterocycles selected from the class consisting of pyrrolidinyl, piperidinyl, piperazinyl, morpholinyl and thiomorpholinyl, and

(l) aryl or heteroaryl selected from the class consisting of phenyl, thiophenyl, pyridyl, pyrimidinyl, furyl, pyrrolyl and oxazolyl,

(vii) $-SO_2R^{108}$, wherein R^{108} is:

(a) a heterocyclic group selected from the class consisting of pyrrolidinyl, piperidinyl, piperazinyl and morpholinyl wherein said heterocyclic group is optionally substituted with one moiety selected from the class consisting of straight or branched alkyl of 1 to 6 carbons, and $-OR^{118}$ (wherein R^{118} is hydrogen or alkyl of 1 to 6 carbon atoms),

(viii) $-COR^{109}$, wherein R^{109} is:

(a) a heterocyclic group selected from the class consisting of pyrrolidinyl, piperidinyl, piperazinyl and morpholinyl wherein said heterocyclyl is optionally substituted with one halogen, straight or branched alkyl of 1 to 6 carbons, or $-OR^{121}$ (wherein R^{121} is hydrogen or alkyl of 1 to 6 carbon atoms), and

(ix) -CHO;

X is an oxygen atom;

R^3 is methyl;

R^4 is a group of the formula $-CH_2R^{55}$, wherein,

R^{55} is:

phenyl, which is optionally substituted at the 4-position with:

(A) R^{59e}, which is aryl or heteroaryl selected from the class consisting of phenyl, pyridyl, and pyrimidinyl

(B) -CN,

(B) nitro, or

(C) halogen;

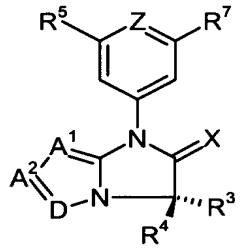
R^5 is Cl;

Z is =C(H)-; and,

R^7 is Cl;

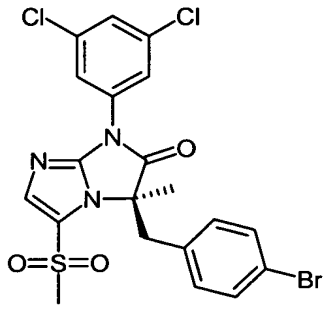
or a pharmaceutically acceptable salt thereof.

9. A compound of the formula I, in accordance with claim 1, 2, 3,4, 5, 6, 7 or 8, with the absolute stereochemistry depicted below in formula II (below).



(II)

10. A compound of the formula I, in accordance with claim 1, selected from the group consisting of: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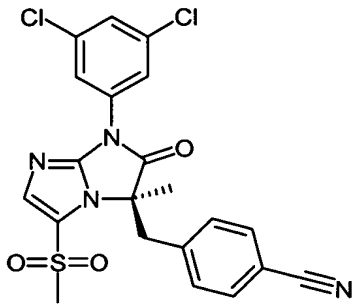
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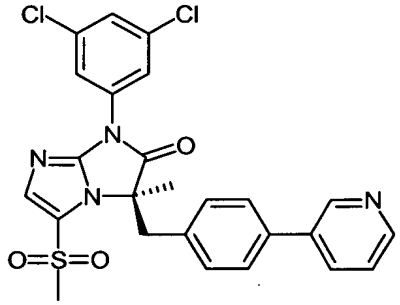
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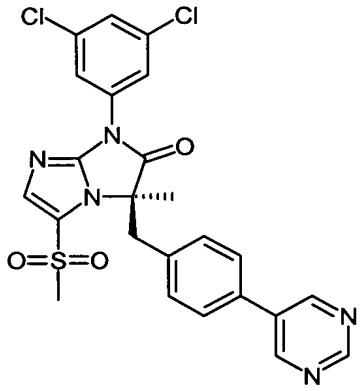
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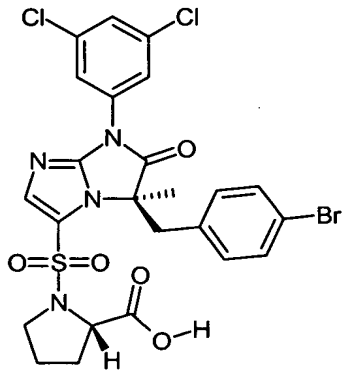
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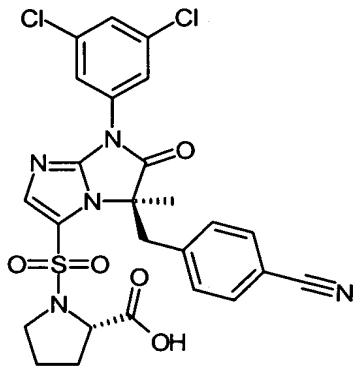
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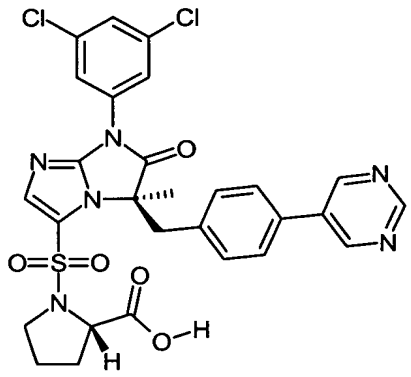
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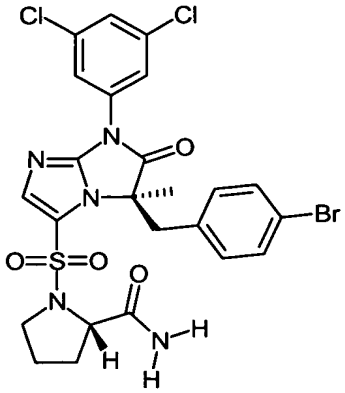
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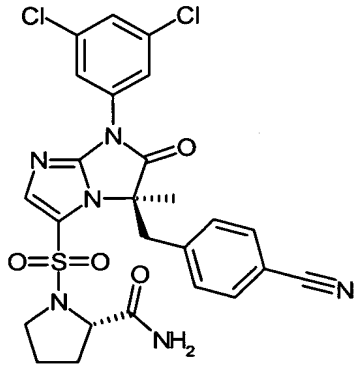
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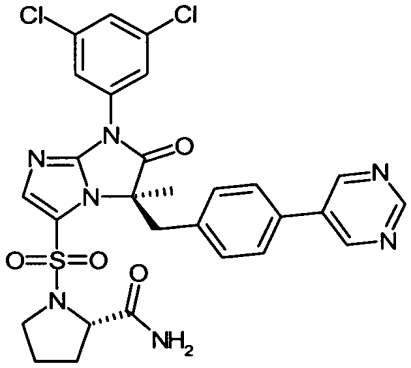
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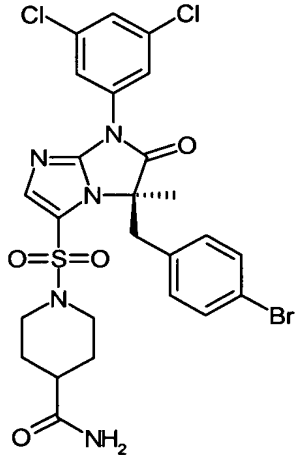
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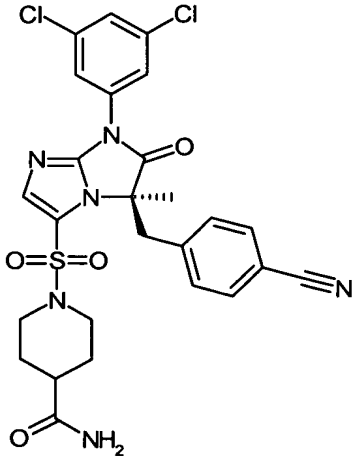
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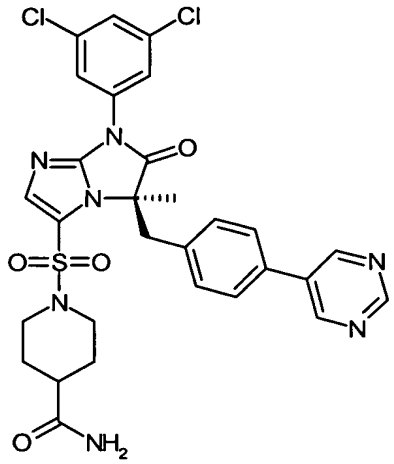

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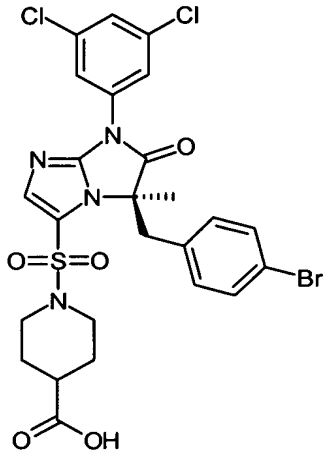

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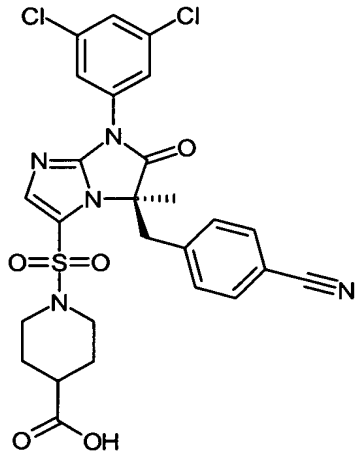

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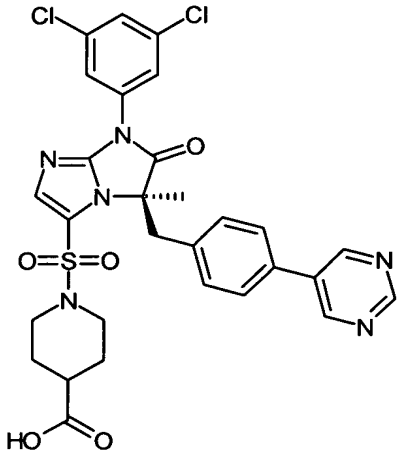

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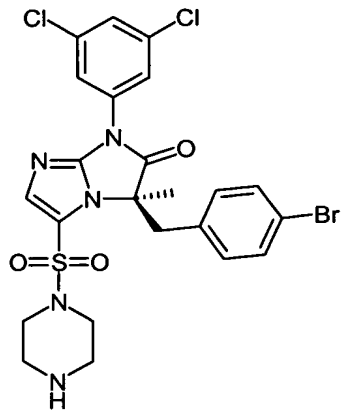

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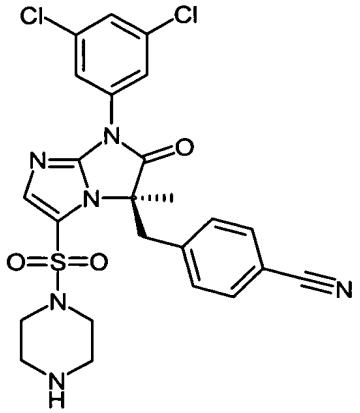

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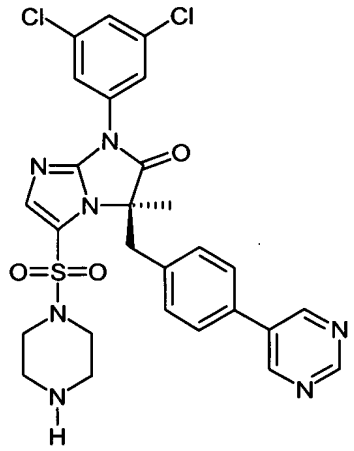

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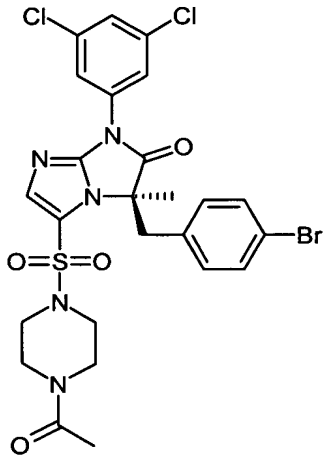

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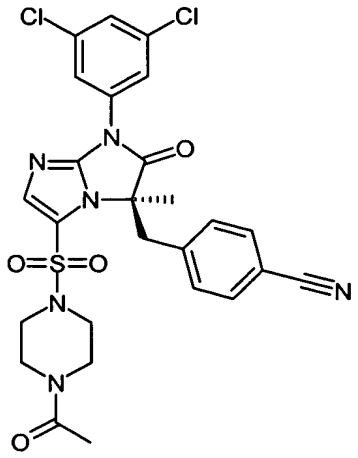

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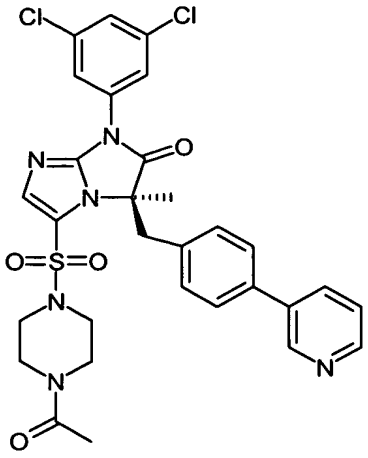

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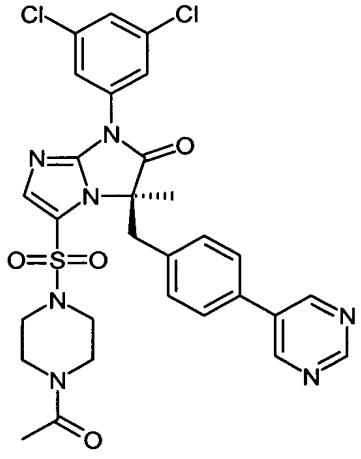

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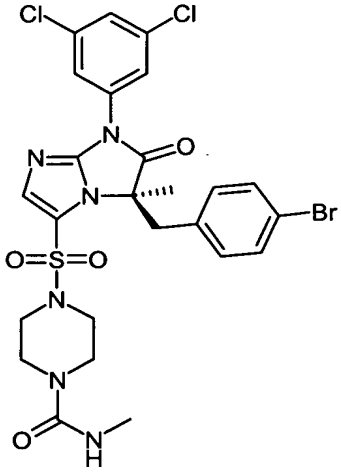

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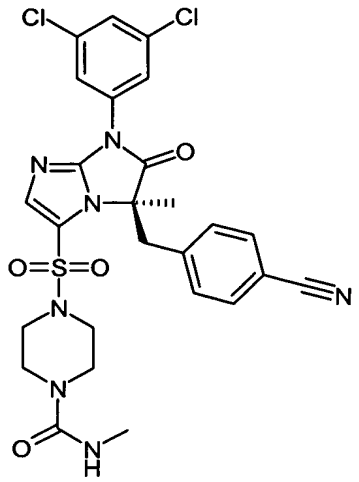
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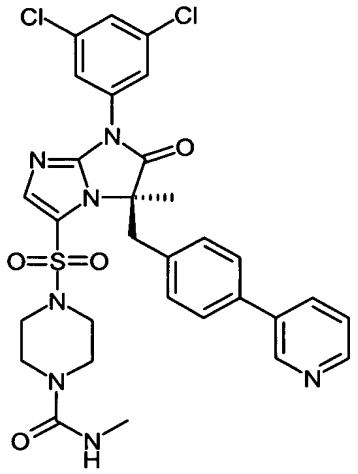
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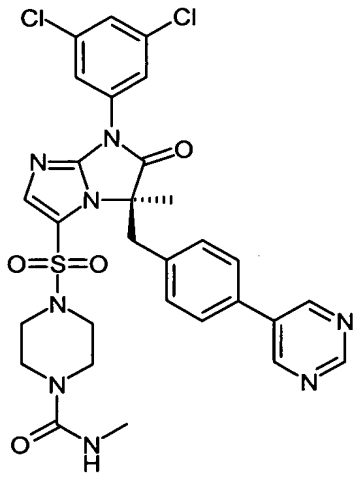

,

or a pharmaceutically acceptable salt thereof.

11. A method for the treatment or prophylaxis of inflammatory or immune cell-mediated diseases which comprises administering to a host in need or such treatment or prophylaxis a therapeutic or prophylactic amount of a compound in accordance with claim 1, 2, 3, 4, 5, 6, 7, 8, 9 or 10. .

12. The method of claim 11 wherein the disease or condition is selected from the group consisting of adult respiratory distress syndrome, shock, oxygen toxicity, multiple organ injury syndrome secondary to septicemia, multiple organ injury syndrome secondary to trauma, reperfusion injury of tissue due to cardiopulmonary bypass, myocardial infarction or use with thrombolysis agents, acute glomerulonephritis, vasculitis, reactive arthritis, dermatosis with acute inflammatory components, stroke, thermal injury, hemodialysis, leukapheresis, ulcerative colitis, necrotizing enterocolitis and granulocyte transfusion associated syndrome.

13. The method of claim 11 wherein the disease or condition is selected from the group consisting of psoriasis, organ/tissue transplant rejection, graft vs. host reactions and autoimmune diseases including Raynaud's syndrome, autoimmune thyroiditis, dermatitis, multiple sclerosis, rheumatoid arthritis, insulin-dependent diabetes mellitus, uveitis, inflammatory bowel disease including Crohn's disease and ulcerative colitis; and systemic lupus erythematosus.

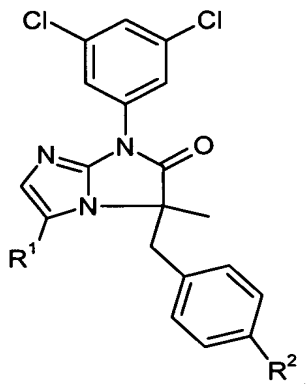
14. The method of claim 11 wherein the disease or condition is asthma.

15. The method of claim 11 wherein the condition is toxicity associated with cytokine therapy.

16. The method of claim 11 wherein the disease or condition is psoriasis.

17. A pharmaceutical composition comprising a compound in accordance with claim 1, 2, 3, 4, 5, 6, 7, 8, 9 or 10.

18. A compound of the formula



wherein,

R^1 is selected from the class consisting of:

(A) hydrogen,

(B) the halogen atoms, and

(C) $SO_2^-M^+$, wherein M^+ is

(i) Li^+,

(ii) Na^+,

(iii) K^+, or

(iv) MgX^+, wherein X is a halogen; and

R^2 is selected from the class consisting of:

(A) the halogen atoms,

(B) aryl, selected from the class of

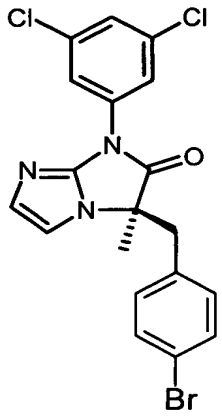
(i) phenyl,

(ii) pyridyl, and

(iii) pyrimidyl, and

(C) CN.

19. In accordance with claim 18, the compound of the following formula:



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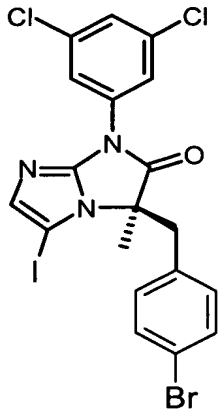
20. In accordance with claim 18, the compound of the following formula:



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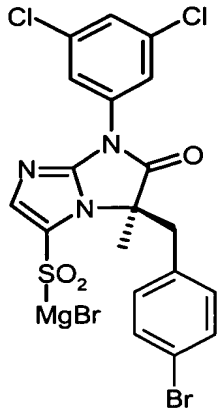
21. In accordance with claim 18, the compound of the following formula:



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